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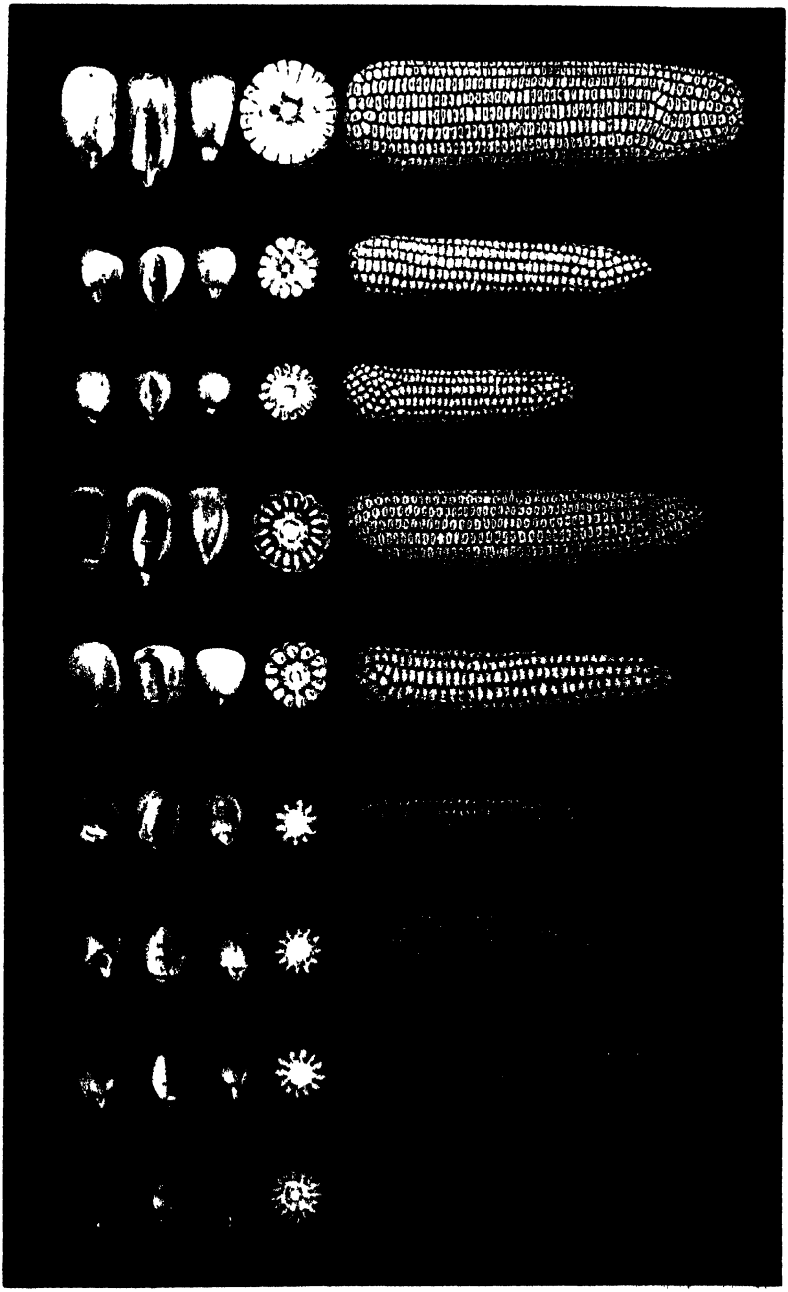

SOME VARIETIES OF FLINT CORN GROWN IN ARGENTINA COMPARED WITH BOONE COUNTY WHITE AND BREWER'S YELLOW CORN PRODUCED IN THE UNITED STATES.

# YEARBOOK

OF THE

# UNITED STATES DEPARTMENT OF AGRICULTURE

1915

WASHINGTON
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* * * * *

[AN ACT Providing for the public printing and binding and the distribution of public documents ]

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Section 73, paragraph 2:

The Annual Report of the Secretary of Agriculture shall hereafter be submitted and printed in two parts, as follows: Part One, which shall contain purely business and executive matter which it is necessary for the Secretary to submit to the President and Congress; Part Two, which shall contain such reports from the different Bureaus and Divisions, and such papers prepared by their special agents, accompanied by suitable illustrations, as shall, in the opinion of the Secretary, be specially suited to interest and instruct the farmers of the country, and to include a general report of the operations of the Department for their information. There shall be printed of Part One, one thousand copies for the Senate, two thousand copies for the House, and three thousand copies for the Department of Agriculture; and of Part Two, one hundred and ten thousand copies for the use of the Senate, three hundred and sixty thousand copies for the use of the House of Representatives, and thirty thousand copies for the use of the Department of Agriculture, the illustrations for the same to be executed under the supervision of the Public Printer, in accordance with directions of the Joint Committee on Printing, said illustrations to be subject to the approval of the Secretary of Agriculture; and the title of each of the said parts shall be such as to show that such part is complete in itself.

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hay crop of 70,071,000 tons was the third in size, and the cotton crop of 16,135,000 bales exceeded the next largest, that of 1911, by 442,000 bales. The total estimated value of all farm crops and animal products for the year is $9,873,000,000, an amount greater by $83,000,000 than the next largest crop value, that of 1913, notwithstanding the great decrease in the price of cotton.

### AGRICULTURAL EXPORTS.

The abundant supplies of foodstuffs made it possible for the country to meet the greatly increased foreign demand and still to retain enough at home to satisfy the normal domestic needs. It was fortunate for our financial relations that these enormous crops coincided with the breaking out of the war. Last fall the question seriously was raised as to how this Nation could discharge to European creditors its floating obligations, amounting at the time, according to the best estimates, to about $400,000,000. It was expected that the exportation of manufactures would decrease, and it was not known that there would be available for export and would be exported such a volume of agricultural commodities. As a matter of fact, between August 1, 1914, and February 1, 1915, the exports were $1,157,000,000 and the imports $771,000,000, giving a favorable balance of $386,000,000. Of the total volume of exports, $662,000,000 represented agricultural and only $495,000,000 nonagricultural commodities, chiefly manufactures. In the same period for the preceding year there were exported $638,000,000 worth of nonagricultural and $722,000,000 of agricultural products, of which cotton alone represented 55 per cent, or $407,000,000, and all other agricultural commodities, chiefly foodstuffs, only $315,000,000. On the other hand, from August 1, 1914, to February 1, 1915, the cotton exports were only $168,000,000 and other agricultural products, mainly foodstuffs, $494,000,000.

The total agricultural exports in the fiscal year ended June 30, 1915, practically the first year of the war, were $1,470,000,000, which is an increase of $356,000,000, or 32 per cent, over those of the preceding year, and of $433,000,000, or nearly 42 per cent, over the average of the five years 1910–1914.

A comparison of exports of the year with those of the preceding year shows that the exports of horses and mules increased from $4,000,000 to $77,000,000, meats and dairy products from $146,000,000 to $220,000,000, wheat (and wheat flour) from $142,000,000 to $428,000,000, corn (and cornmeal) from $7,000,000 to $39,000,000, oats from $1,000,000 to $57,000,000, and barley from $4,000,000 to $18,000,000, while cotton decreased from $610,000,000 to $376,000,000, and tobacco from $54,000,000 to $44,000,000. These products comprise nearly nine-tenths of the total agricultural exports.

A great gain is shown here in the exports of horses and mules. Usually the number of horses and mules exported is insignificant. The total for the year (355,000) represents little more than 1 per cent of the supply in the United States, and was not sufficient to prevent a decline of about 4.6 per cent in the average price.

By far the greatest gain in American agriculture in the first year of the war arose from increased demand for grain. The exports of wheat (and wheat flour) represented about 37 per cent of the crop of 1914, the usual exportation being less than 20 per cent. Farmers received an average of 79 cents a bushel for the 1913 crop and $1.01 for that of 1914—an increase of 22 cents a bushel or an aggregate gain of approximately $196,000,000.

The exports of corn, oats, and barley greatly increased, but, as they were only a small part of the total production, the direct influence on prices was comparatively small. The exports of corn (and cornmeal), 51,000,000 bushels, were less

than 2 per cent of the total yield (2,673,000,000 bushels); but, as the crop of 1914 was 226,000,000 bushels larger than that of the preceding year, the exports did not absorb one-fourth of the surplus, and the average price received by farmers was slightly less than that for the 1913 crop. Exports of oats increased from 2,000,000 to 97,000,000 bushels, about 8 per cent of the crop, enough to have some influence on prices. The average price per bushel to farmers was 30 cents, compared with 29 cents the preceding year. Exports of barley, 27,000,000 bushels, were nearly 14 per cent of the crop, sufficient to have material influence on prices; so that, while the production was nearly 10 per cent larger than that of 1913, prices averaged 2 cents higher per bushel.

Although the exports of meats and dairy products rose from $146,000,000 to $220,000,000, or about one-half, they did not prevent a decline in prices to producers of cattle and hogs, possibly because of a still greater increase in available supplies during the year.

### THE COTTON SITUATION.

The greatest adverse effect of the disturbance was on cotton marketing. The reason for this may be seen from a few comparisons. Under normal conditions we export more than 65 per cent of the cotton crop, 40 per cent of the tobacco crop, 15 per cent of wheat, 4 per cent of barley, less than 2 per cent of corn, and less than 1 per cent of oats. Or, making the comparison with our total agricultural exports, cotton constitutes approximately 53 per cent of the whole; cottonseed products, 3 per cent; meats and other packing-house products, 15 per cent; wheat (and wheat flour), 10 per cent; tobacco, 4 per cent; corn, oats, and barley combined, about 3 per cent; all others, 12 per cent.

Soon after the outbreak of the war the cotton market became demoralized from fear that exportation would be stopped or materially curtailed and from realization of the fact that the crop would be large. The price to farmers on August 1, 1914, was 12.4 cents per pound. By November 1 it had fallen to 6.3 cents per pound, a reduction of nearly one-half. The cotton crop of 1913 averaged to producers 12.5 cents per pound; that of 1914, 7.3 cents, a decline of over 40 per cent. The total value of the former to producers was $846,000,000; of the latter, $563,000,000; that is, $283,000,000 (or one-third) less, although the production was 11 per cent larger. The meaning of this shrinkage to cotton-growing sections may be realized when it is noted that cotton (and cotton seed) represents nearly two-thirds of the value of all crop production in Georgia and Mississippi, 63 per cent in Texas, 60 per cent in Alabama, and 53 per cent in Arkansas. Interference with the exportation of cotton did not prove to be as great as in the early part of the season it was apprehended it would be; for by June 30, 1915, the total year's shipments were within 8 per cent of those of the preceding year; but the value had shrunk 38 per cent, or from $610,000,000 to $376,000,000.

### YIELDS FOR 1915.

The higher prices for grain and the lower prices for cotton stimulated the planting of grain crops in 1915, but caused a considerable reduction in cotton acreage. Coincident with the increased grain acreage and the diminished cotton acreage there was a large yield per acre of grain and only a moderate yield per acre of cotton. The preliminary (not final) estimates of crop production for 1915 indicate that the aggregate will be about 7 per cent greater than that for 1914 and about 17 per cent larger than the average of the preceding five years. If the estimates are approximately correct, there will be record crops of wheat, oats, barley, and hay, the second largest crop of corn, and the third largest of tobacco. The production of potatoes is expected to be about average, at least 10 per cent less than the large crop of 1914. The cotton crop will be a short one, estimated at less than 11,000,000 bales, compared with a production of 16,135,000 bales last year and with an average yearly production in the preceding five years of 13,033,000 bales. This decrease will result from the reduction of about 15 per cent in the cotton acreage and a 20 per cent poorer yield. The quantity of cotton carried over from the 1914 crop will be considerably larger than usual, but, with the smaller production for the year and the larger domestic demand for cotton for manufacture, the amount exported will decrease unless a decided change in foreign prices occurs.

## PRODUCTION.

### IMPORTANCE OF RESEARCH.

The obvious need of adequate and effective machinery to make available to the farmer the large body of useful information accumulated through the research work of the department, the State experiment stations, and other agencies sharply engaged the attention of the Congress and the country for several years. The result was the passage of the cooperative agricultural extension law in May, 1914. The plans in operation under this act undoubtedly will go far toward accomplishing the desired end.

Farm marketing and finance have demanded and still require the attention of those interested in the welfare of all classes of the American people. A beginning in this field has been made by the establishment of the Office of Markets and Rural Organization, which is at work upon many important problems.

The fact that special emphasis has been placed upon the improvement of methods of disseminating agricultural information and of marketing farm products does not indicate that all the important problems of production have been solved or that the need for agricultural research is being adequately met. This is indeed far from the case. It is increasingly apparent that as the development of our agriculture brings into use other regions, includes new crops, and makes readjustments necessary to meet changing economic conditions, new and vital problems in research continually are coming to light.

Many investigations, while more or less successful from the standpoint of the scientist, have not progressed far enough to yield results which can be applied safely to improve agricultural practice. In agriculture, as in medicine, oftentimes knowledge of the causes of trouble is attained long before a remedy is discovered. In other cases results which have been reduced to practice locally require to be tested more widely or to be modified to suit regional conditions. In some very important lines the researches thus far made or now in progress have been on too small a scale to yield satisfactory results.

The limitations of our agricultural knowledge doubtless will be felt more keenly as the rapidly growing system of extension work develops. Rural people thus will be stimulated to study their conditions more carefully and will discover new problems. The record of the past half century indicates that the country relies very largely upon the Department of Agriculture and the State experiment stations for the solution of such problems. It is clearly evident that when normal conditions are restored it will be desirable for the Congress to consider a well-balanced enlarged program for agricultural research.

It is not proposed at this time to suggest the special problems most urgent and of largest practical importance to agriculture for the investigation of which adequate means have not been provided. Undoubtedly active research should be continued on those which arise in connection with the regulatory activities of the department. Beyond this, provision should be made as soon as practicable for the further development of numerous lines of research related directly to production and distribution. While, as in the past, special attention should be paid to investigations having direct and obvious bearing upon practical agriculture, earnest efforts should be put forth to discover underlying principles.

With the funds at its disposal, the department, through its various agencies, has continued to study problems of production. It has assisted in combating plant and animal diseases, in encouraging plant and animal breeding, in promoting better farm methods, in improving farm business, and in encouraging a better balanced agriculture in the various sections of the Union.

## THE MEAT SUPPLY.

In the last annual report particular attention was called to the desirability of increasing the number of meat animals. The department has given added attention to this problem and has extended its activities as far as available funds permitted. The farmer who keeps only enough animals to supply meat to his family, as well as the large ranch owner, has received assistance. The attention of the single-crop farmer has been directed to the need of diversification and the introduction of live stock as essential to a sound agricultural economy. That more beef animals should be produced in the settled areas of the country, particularly in the South, is beyond question. In many sections the feeding of beef cattle is one of the best means of utilizing rough feed and of supplying stable manure for crops.

Considerable work has been done in the South by the Bureau of Animal Industry to develop the practice of feeding cottonseed cake to cattle pastured in summer; and recent experiments have demonstrated the feasibility of feeding calves to produce baby beef. The success of these experiments, it is expected, will lead gradually to a change throughout the entire South. Furthermore, in cooperation with the

State agricultural colleges, the production of pure-bred cattle and hogs in the South is being made possible through the organization of live-stock associations and the introduction of registered beef cattle and hogs for breeding purposes.

In the Great Plains region the problem is to utilize roughage and dry-land grains. Remoteness from market or the necessity for raising crops which must be consumed on the farm makes cattle raising imperative. In the Panhandle of Texas demonstrations conducted by the department indicate that beef production may become a feature of farming in that section. Every year a greater number of cattle is fed there and marketed direct. This practice makes it possible to maintain on a smaller acreage more cattle than the old range conditions permitted and greatly enhances the possibilities of beef production.

PIG AND POULTRY CLUBS.—Among the most promising agencies for increasing the meat supply of the country, and particularly that of the individual farm, are the pig clubs. These organizations have been developed as rapidly as funds permitted. Originally started in the South, the clubs have extended into many Northern and Western States, and during the year they had a membership of about 9,000 boys and girls. In 11 counties in Georgia where pig-club work is conducted, 11,000,000 pounds of cured pork were produced during 1914. A large percentage of the farmers in these counties also are producing pork; and the hogs in pig-club communities are increasing rapidly in quality, size, and value. Over 2,000 registered hogs, of which 75 per cent are sows, are owned by pig-club members.

Poultry clubs likewise have received much attention. These have been organized in 98 counties in 6 Southern States, with a total membership of 4,000. The members are raising poultry for the family table, and the clubs are becoming centers for the development of the community breeding of poultry.

ELIMINATION OF DISEASE.—Last year the ease with which the meat supply can be increased materially by controlling or eliminating the common live-stock diseases was pointed out. The direct losses from them are enormous. It is impossible to give any accurate statement even of direct losses. The indirect losses, which also are great, can not be estimated at all. It has been conservatively estimated on the basis of data for 30 years that the annual direct losses from animal diseases are approximately $212,000,000. The loss ascribed to each disease is as follows:

| | |
|---|---|
| Hog cholera | $75,000,000 |
| Texas fever and cattle ticks | 40,000,000 |
| Tuberculosis | 25,000,000 |
| Contagious abortion | 20,000,000 |
| Blackleg | 6,000,000 |
| Anthrax | 1,500,000 |
| Scabies of sheep and cattle | 4,600,000 |
| Glanders | 5,000,000 |
| Other live-stock diseases | 22,000,000 |
| Parasites | 5,000,000 |
| Poultry diseases | 8,750,000 |

The necessity for vigorous prosecution of work to prevent these losses is obvious. It has been emphatically impressed upon the country since the last outbreak of foot-and-mouth disease, the appearance, spread, and control of which are discussed more fully in another part of this report.

THE CATTLE TICK.—The work of eradicating the cattle tick in the South has been prosecuted with energy, and its progress is making possible a fuller development of the cattle industry in that section. To June 30, 1915, 253,163 square miles had been freed of this pest, 37,255 square miles being opened up during the year. Wherever areas are released from quarantine the cattle industry receives a marked impetus. The northern markets for beef cattle and feeders are open to southern farmers and the southern market to northern breeders. The elimination of the tick is of great importance to all sections of the country and consequently is a matter of national concern.

HOG CHOLERA.—While the eradication of hog cholera must be the work of many years and the department is not ready to suggest any one plan which gives reasonable promise of ultimate success, there is no question that the use of properly prepared serum already has had a pronounced effect. Great numbers of hogs have been saved. The systematic eradication work conducted in certain counties in 16 States shows that 178 hogs in a thousand died from cholera in 1912, 168 in 1913, and only 49 in 1914. Only 62,690 died in these counties in 1914, as compared with approximately 200,000 in each of the two years preceding.

PUBLIC GRAZING LANDS.—An important factor in connection with the country's meat supply is the public grazing domain. The lands outside of the National Forests, of which there are about 280,000,000 acres, are not supporting the number of meat-producing animals they should. In the absence of any control by the Government these lands have been overgrazed. That they can be restored to their former usefulness is proved by what has been accomplished on the National Forests and in Texas. On the Forests under regulated grazing the number of stock has been increased 50 per cent. Practically the same increase has been secured in Texas under its leasing system. There should be a classification of the remaining lands at the earliest possible date to determine their character and to secure information upon which to base plans for their future improvement and use and for the distribution among settlers of those portions upon which it is possible to establish homes.

### FOOT-AND-MOUTH DISEASE.

An outbreak of foot-and-mouth disease in the fall of 1914 presented a serious menace to the live-stock industry of the United States. First appearing in the vicinity of Niles, Mich., the malady spread to 22 States and the District of Columbia. Work of eradication was undertaken by the department in cooperation with the authorities of these States.

Foot-and-mouth disease, or aphthous fever, is highly infectious. It is confined chiefly to cloven-footed animals and is characterized by an eruption on the mucous membrane of the mouth and on the skin between the toes and above the hoofs. So rapid and sweeping is its spread that when the infection once gains access to a herd or a farm practically every susceptible animal is soon attacked. Although the mortality usually is low, heavy economic losses result from the interruption and derangement of business.

PREVIOUS OUTBREAKS.—This disease has prevailed in Europe for a great many years and has caused enormous financial losses. It also is common in portions of South America and in the Orient. Only occasionally has it reached the United States. The present is the sixth known visitation. The first three outbreaks, in 1870, 1880, and 1884, were comparatively trifling; those of 1902 and 1908 were more grave; while the latest is the most serious and extensive of all.

In 1870 the infection was brought into Canada with cattle from Scotland. It spread into the New England States and New York but disappeared after a few months. About 1880 two or three lots of animals affected with the disease were brought to the United States; but no trouble followed. In 1884 there was a small outbreak at Portland, Me. The disease spread to a few herds outside the quarantine station, but, owing to the small number of animals and the limited area affected, it was easily controlled.

In November, 1902, the malady was discovered in Massachusetts and Rhode Island and later involved New Hampshire and Vermont. The source of the infection probably was imported cowpox vaccine virus contaminated with the virus of foot-and-mouth disease. This outbreak was eradicated in about six months. The methods consisted of inspection to trace and detect the disease, quarantine of infected premises and territory, slaughter of diseased and exposed animals, and disinfection of premises. Two hundred and five herds, comprising 3,872 cattle, as well as 360 hogs and 320 sheep and goats, were slaughtered. The animals were appraised before slaughter and the Federal Government reimbursed the owners to the extent of 70 per cent, the States paying the remainder. The total cost to the Department of Agriculture of controlling the outbreak was about $300,000.

The disease next appeared early in November, 1908, in cattle near Danville, Pa. It was traced to the stockyards in East Buffalo, N. Y., and to Detroit, Mich., and extended to other points in Michigan, New York, and Pennsylvania, and to Maryland. Investigation demonstrated that the outbreak started in calves used to propagate vaccine virus at an establishment near Detroit and that the source of the infection was contaminated Japanese vaccine virus. Vigorous measures similar to those employed in 1902–3 at once were put into effect, and the disease was stamped out in about five months, at an expense to the Department of Agriculture of approximately $300,000, and to the States of $113,000. The Federal Government paid two-thirds and the States one-third of the appraised value of the animals slaughtered. One hundred and fifty-seven premises were infected and 3,636 animals were destroyed.

In all the early outbreaks the contagion was introduced with imported animals. Since the establishment by the Department of Agriculture of a stringent system of inspection and quarantine of imported live stock no infection from that source has occurred. On subsequent occasions the disease evidently has been brought in with contaminated products or materials, and not by means of live animals. Early conditions were unfavorable to its extension and made its control possible without rigorous measures. The limited movement of live stock, the comparatively small extent of commerce and transportation, and the relative infrequency of travel at that period all tended to restrict the spread of the infection.

THE 1914 OUTBREAK AND DIFFICULTIES OF DIAGNOSIS.—The latest invasion, discovered near Niles, Mich., proved to be the most serious and extensive ever known in this country. Toward the end of August, 1914, the attention of the State veterinarian of Michigan was called by local veterinary practitioners to a disease resembling foot-and-mouth disease in two or three herds of cattle in Berrien County. It was not until October 15 that it was recognized positively in the department as the foot-and-mouth malady. This delay in diagnosis was due to a combination of circumstances, especially to the fact that the infection at first was unusually mild and the lesions were obscured or obliterated by lesions of necrosis or decayed tissue.

After visiting the locality the State veterinarian consulted an assistant veterinary inspector on the meat-inspection force of the Bureau of Animal Industry at Detroit (in the absence of the inspector in charge), and together, on September 3, they made an examination of the cattle. They failed, however, to recognize the affection as foot-and-mouth disease on account of its mild type, the absence of characteristic lesions, and the presence of lesions having the appearance of necrotic stomatitis, or sore mouth. In other words, instead of the typical vesicles or watery blisters, there were present scabs and pus from necrotic ulcers and the odor of necrotic stomatitis. The findings reported by the assistant inspector to the department by telegraph, and also by letter, were that the lesions were characteristic of necrotic stomatitis and that the affection was not foot-and-mouth disease.

A few scrapings forwarded to the pathological laboratory of the Bureau of Animal Industry at Washington apparently indicated a form of stomatitis. They arrived, however, in such a condition as to render it impossible to make a positive diagnosis. In view of the diagnosis of necrotic stomatitis already made, the prevalence of that trouble as reported continuously by different branches of the bureau's service, and the absence of any hint of the presence of foot-and-mouth disease in the United States since 1909, the conclusion of the State veterinarian and the assistant inspector, both of whom had had experience during the outbreak of 1908–9, was not questioned.

It is very difficult and often impossible to make a diagnosis from a bit of tissue. Mixed infection, such as was presented in the case in question, frequently leads to erroneous conclusions. As the virus of foot-and-mouth disease can not be seen with the microscope and will pass through the finest filter, ordinary laboratory procedure will not determine its presence. Inoculation of the usual laboratory animals likewise is insufficient. In the circumstances it is not surprising that a laboratory examination of the pus and scabs failed to disclose the true character of the malady.

On September 24 the pathologist of the State Live Stock Sanitary Commission visited an infected farm near Niles, made an examination of the cattle, and collected specimens, without arriving at a diagnosis of foot-and-mouth disease. Two days later the State veterinarian and the pathologist visited this same farm and several others. The pathologist expressed the belief that the malady was foot-and-mouth disease and suggested to the State veterinarian that he telegraph this opinion to Washington and request that, while awaiting the results of a laboratory examination, an investigation by an expert be made. The State veterinarian agreed with him as to the fact, but thought that the matter should be taken up with the local office of the Bureau of Animal Industry in Detroit instead of directly with the Bureau at Washington. The pathologist took the specimens to Lansing, and on September 28 inoculated a calf. By October 1 the calf showed fever, drooling, and mouth erosions; but the case was not diagnosed as foot-and-mouth disease because of the absence of foot lesions. Neither these visits, these opinions, nor the results of the inoculation were made known to the department in Washington until October 10.

The pathologist connected with the office of the State veterinarian of Indiana, on October 12, received specimens from infected animals and made cultures which upon microscopic examination disclosed the necrosis bacillus. The presence of this organism was considered sufficient to indicate that the lesions were those of necrotic stomatitis.

On October 5 the State veterinarian of Michigan, the president of the Live Stock Sanitary Commission, and the inspector in charge of the office of the Bureau of Animal Industry at Detroit went to Berrien County to make another examination. A letter from the inspector, in which he included no diagnosis but described in detail certain symptoms pointing to the possibility of foot-and-mouth disease, was received by the chief of the bureau in Washington Saturday afternoon, October 10. This was the first information to reach him giving ground for suspicion that foot-and-mouth disease might be present. The inspector at Detroit had not had any experience with this malady and for that reason did not attempt a diagnosis. An expert was sent from Washington to Michigan on the first train after the letter was received, while calves were inoculated at the bureau's experiment station near Washington. In addition to physical examination, calves also were inoculated by the expert on the ground.

SPREAD OF INFECTION AND STEPS FOR ERADICATION.—Immediately after the discovery of the true nature of the disease a force of inspectors was dispatched to the infected locality. A thorough canvass disclosed, up to October 17, 39 infected herds in southern Michigan and 7 in northern Indiana. An order, effective October 19, was issued, placing under quarantine the counties of Berrien and Cass, in Michigan, and St. Joseph and Laporte, in Indiana.

The infection seems to have been carried in milk to the creameries at Buchanan, Mich. The skimmed milk was fed to hogs and the disease was communicated to them. A carload of the hogs, before these facts were known, was shipped to Chicago and doubtless carried the infection to the Union Stock Yards there. From that point it was spread by shipments of live stock to various parts of the country. Some of the large eastern stockyards became involved, and the disease was disseminated from them. It extended to the following States, besides the District of Columbia: Connecticut, Delaware, Illinois, Indiana, Iowa, Kansas, Kentucky, Maryland, Massachusetts, Michigan, Minnesota, Montana, New Hampshire, New Jersey, New York, Ohio, Pennsylvania, Rhode Island, Virginia, Washington, West Virginia, and Wisconsin.

On October 28, when the movement of stock from the originally infected center in Michigan had been traced to the Union Stock Yards, an order was prepared, effective October 31, quarantining those yards and permitting animals to be shipped from them only for immediate slaughter. Numerous other quarantine orders were issued from time to time as infection was discovered or as other conditions warranted. They not only prohibited or restricted the movement of certain farm animals but regulated the movement of hay, straw, and other possibly dangerous materials.

Steps were taken to enlist in the work of eradication the aid of the authorities of the States affected. Satisfactory arrangements rapidly were made, and the work has been prosecuted jointly by the department and the States. The costs incurred have been divided about equally between the Federal and State Governments.

**Methods and progress of eradication.**—The methods of eradication were similar to those used in the outbreaks of 1902 and 1908, with such improvements in detail as experience suggested. The veterinary and other forces of the Bureau of Animal Industry in various parts of the country were drawn upon in order, with the least possible delay, to place inspectors where they were needed. It was necessary to trace the movement of live stock from infected premises and regions, to examine railway and stockyard records, to trace and locate cars that had carried infected stock, to clean and disinfect them, to go from farm to farm and examine all susceptible animals, to enforce local and general quarantines of the Federal and State Governments, to slaughter and bury as quickly as possible all diseased and exposed animals, and to disinfect the premises that had been occupied by them. To avoid the spread of infection by inspectors and other employees these men were required to wear rubber outer clothing, which could be washed easily with disinfectants, and to fumigate and disinfect themselves before leaving premises visited by them. Before slaughter the animals were appraised by an official agreed upon by the State authorities and the department, and the owners later were paid the stipulated amount. The appraisal was based upon the meat or dairy value of the animals.

For a time the disease continued to appear in new territory and new cases were found more rapidly than it was possible to dispose of old ones. After months of vigorous work, however, the outbreak was brought under control, the spread of the disease was checked, and there was a steady diminution in the number of cases. On June 18, 1915, the last herd known to be infected at that time had been slaughtered and buried and the premises disinfected.

SOURCES OF INFECTION.—The exact origin of this outbreak has not been discovered, although there seems to be no doubt that the infection was introduced from a foreign country. An effort was made to trace the source of infection of each diseased herd, and the information obtained has been classified. The principal means of transmission was the shipment of animals directly from public stockyards (707 out of a total of 3,021 herds investigated). Neighborhood visiting caused infection of the next largest number (509); direct contact with neighboring animals, of 346; animals brought from infected stables or lots, of 285; creameries, of 269; and dogs, poultry, and birds, of 146.

THE NATIONAL DAIRY SHOW HERD.—The cattle exhibited at the National Dairy Show in Chicago, October 22–31, 1914, constituted a special problem. Before its opening the local inspector of the Bureau of Animal Industry warned the manager of the danger of holding it because of the recent discovery of foot-and-mouth disease. At the close of the show the department, as a precautionary measure, requested the State veterinarian to detain the cattle for a few days to determine whether they had become infected. On November 1 one of the cows developed the disease, and the herd immediately was placed under close quarantine by the State.

This herd consisted of over 700 head of very valuable pure-bred cattle. Their slaughter would have been a misfortune. The conditions under which the animals were held made it possible to maintain a quarantine, and it was decided to try to save them. They were confined in a brick building, where it was practicable to establish hospital conditions and to prevent ingress and egress of persons and animals except under absolute control. All persons were prohibited from leaving the building until they had been thoroughly disinfected. No dogs, cats, poultry, or birds could gain access to the building. Apparently the animals made a complete recovery, and were released from quarantine May 31, 1915, after very thorough tests had demonstrated that the herd did not harbor infection.

RECURRENCE OF THE DISEASE.—On August 8, 1915, the local inspector in charge of field work at Chicago telephoned to Washington that a case of foot-and-mouth disease had been discovered among 119 hogs and 4 cattle at Wheeling, Cook County, Ill., 22 miles north of Chicago. It seems certain that this infection was produced by contaminated hog-cholera basis for appraisal, and in former outbreaks this basis was used. The suggestion was made that the department be authorized to take breeding value into consideration; but the Congress, in making an appropriation to reimburse the owners of the National Dairy Show herd for expenses incurred by them incident to the quarantine, specifically provided that the beef or dairy value only should be the basis of the appraisement. As the disease still prevails in certain parts of Illinois, and there is no guaranty that it may not spread, it would seem that for the ensuing year an appropriation equal to the current one should be made. It may not be necessary to expend the appropriation; but it would be exceedingly unfortunate if the disease were to spread or reappear and the department had no adequate funds or authority. The estimates contain an item covering this matter. In connection with it the suggestion is made that in payment for animals hereafter purchased for slaughter the appraisement may be based on the beef, dairy, or breeding value, provided that in case of appraisement based on breeding value no payment for any animal shall exceed three times the beef or dairy value. Both equity and practical expediency justify taking breeding value into account. The practical consideration is this: Prompt action is of the highest importance, and if owners feel that they will not receive a fair return they may resist the Federal and State authorities. A maximum limit also seems essential to speedy settlement. The department would exercise the requisite care and is not apprehensive that extravagant appraisements would be permitted.

### HOG CHOLERA AND SERUM.

Experiments for the purpose of determining the best method to control or eradicate hog cholera demonstrate that, by employing certain systems involving the use of hog-cholera serum, losses can be reduced to a minimum and the swine industry greatly benefited. The work also shows, however, that success over a large territory would require the employment of an immense force of men and the expenditure of enormous sums. It seems that, at the present time, a country-wide campaign for the eradication of the disease would be ill advised. The problem is not one for the Federal Government alone. Before an active campaign is begun the various States should have more effective laws relating to diseases of live stock and more extensive organizations for enforcing such laws.

In round numbers there are produced annually in the United States 200,000,000 cubic centimeters of serum. Of this amount, approximately 50,000,000 cubic centimeters, or about 25 per cent, are prepared by State governments. Serum is produced by the Federal Government for experimental purposes only. The remaining 150,000,000 cubic centimeters are manufactured by private establishments. It is probable that there are in operation in the United States between 90 and 100 such establishments. Of these, 81 have secured licenses from the Department of Agriculture under the virus-serum-toxin act of 1913, and thereby are enabled to carry on interstate business. Of the total quantity of serum privately prepared, it is estimated that more than 90 per cent comes from plants holding licenses from the department.

THE VIRUS-SERUM-TOXIN ACT.—The statute prohibits the shipment from one State or Territory to another State or Territory of any virus, serum, toxin, or analogous product which has not been prepared at a plant holding an unsuspended and unrevoked license from the Department of Agriculture. It also is made unlawful to ship interstate any virus, serum, toxin, or analogous product which is worthless, contaminated, dangerous, or harmful.

The department is authorized to make and promulgate such rules and regulations as may be necessary to prevent the preparation, sale, barter, exchange, or shipment in interstate commerce of worthless or contaminated viruses, serums, etc. It is provided that a license shall be issued on condition that the licensee shall permit the inspection of his establishment and of the products and their preparation. The department may suspend or revoke licenses after opportunity for hearing has been granted. The law gives authority for Federal agents or employees to enter and inspect any licensed plant at any hour. Penalties of fine or imprisonment, or both, are provided for violations.

In carrying out the virus-serum-toxin act the department has issued regulations designed to prevent the interstate shipment of worthless, contaminated, dangerous, or harmful hog-cholera serum, hog-cholera virus, and other products. Fifty-six trained inspectors are assigned to the work of inspecting the licensed plants and detecting violations of the law. A number of violations, particularly shipments of serum not prepared at establishments holding licenses, have been discovered and successfully prosecuted. Notwithstanding the efforts of the department, apparently there have been shipments of contaminated or worthless serum by licensed companies. These occurrences have resulted in part from the ignorance or carelessness of the owners. In some cases they have been due, perhaps, to cupidity; in others, to novel situations presented by the unexpected outbreak of foot-and-mouth disease.

There seems to be a widespread belief that the products of a licensed establishment in some way are certified or guaranteed by the Federal Government. Under the existing system it has not been possible for the department to assure users of the quality of such articles. The business of serum production is such that supervisory inspection alone, without complete control, and with power to penalize violations of the law only by revocation of licenses or by prosecution, is not sufficient to warrant the assumption by the Government of responsibility for the products.

CONTROL OF SERUM PRODUCTION.—The recent cases of infection of serum and virus with foot-and-mouth disease indicate that some more effective form of control over serum production is most desirable. It has been suggested that the object could be accomplished by Government ownership. While there is much to be said in favor of such a plan, it seems doubtful whether it would be practicable. Certainly it would seem unwise for the Government to produce the material unless it could control the entire output. Recent information shows that 21 States have established plants and now are engaged in the production of serum on a comparatively large scale. It is a question whether these States, with their active organizations, would wish or consent to discontinue the work. Aside from this, the purchase of the establishments now in existence and the erection of others by the Federal Government would necessitate a large outlay. Even though this expenditure were made, it must be remembered that Government officials are liable to error, and that Federal manufacture, though it secured honesty of methods, would not serve as a guaranty that no contaminated or worthless serum would be sold.

GOVERNMENT TEST STATION.—As a substitute for Government ownership, the following plan merits careful consideration:

(1) Continue the inspection service as at present constituted under the act of 1913, maintaining a sufficient force of inspectors so that all important processes of licensed establishments may be carried out under the constant supervision of department employees; and require that all products after preparation be securely locked up by employees of the department, whose duty it shall be to withdraw representative samples.

(2) Provide by law for—

(*a*) The establishment and maintenance of a "Government test station" for serum. The purpose of this station would be to receive official samples of all serum produced by licensed plants and to test them for purity and potency. Upon completion of the test the official in charge immediately would make known the results to the inspector at the plant from which the sample was derived, and the material, if found potent and pure, then would be released with proper markings or seals to show that it had been tested.

(*b*) The prohibition of the interstate shipment of any product a sample of which had not been tested and found pure and potent.

(*c*) The imposition of a tax upon all serum, samples of which have been tested, with adequate provision for the affixing of tax stamps and marks prior to sale or shipment.

The available methods for determining purity and potency are not scientifically exact. Tests, however, are a necessary and most important part of any system of control. They are now made by the commercial establishments themselves on animals procured by them and at all times under their care. It is impracticable for the Government to make them within privately owned and operated plants. Furthermore, so long as the plants conduct the tests, it is manifest that the Government can not select and know the complete history of the animals. In the preparation of the serum the inspectors can see that the steps necessary to produce a good article are carried out. In this particular the inspection is adequate and effective. It appears, therefore, that the weak point at present is the inspection of the tests, and the department believes that these should be under Government control. At the same time, not being absolute, they should be supplemented. Supervision at the producing plants of the methods of preparation and handling should be continued.

It is probable that an adequate test station could be provided for about $50,000. If several were found to be desirable, a suitable appropriation for each would have to be made. The cost of maintaining a station capable of testing the entire output of commercial serum in the United States probably would not exceed $150,000 annually.

The suggestion is made that a tax sufficient to cover the cost of maintaining the station should be imposed. This tax should not operate to increase the cost of serum to the farmer, because manufacturers would be relieved of the expense of conducting their own tests. While the plan indicated contemplates control only of serum intended for shipment in interstate commerce, it is likely that the States would take similar action and apply similar rules to their own plants as well as to private establishments doing business wholly within the State. The plan probably would be effective and would require little additional expenditure of public funds.

## CITRUS CANKER.

The citrus industry of the Gulf States is seriously threatened by citrus canker. This has been found to be a highly infectious bacterial disease. An emergency appropriation of $35,000, which became available January 28, 1915, enabled the department to cooperate with the States of Florida, Alabama, Mississippi, Louisiana, and Texas in an effort to eradicate the trouble, the department bearing the cost of the inspection work, while the expense incident to the actual destruction of trees was borne by the respective States. The work of inspection and eradication has progressed very satisfactorily, although the disease is more widely scattered and is more serious than at first was supposed. In Texas, Mississippi, and Alabama the greater number of the infected centers have been eliminated, and, if it is possible for these States to maintain a thorough inspection during the coming year, there appears to be no reason why the disease should not be completely eradicated from these regions. In Louisiana and Florida the greater portion of the infected areas seems to be under control, but the complete elimination of the disease, especially from the latter State, probably will require large expenditures for at least two years.

### POTASH SUPPLY.

The potash situation continues very serious and a grave condition confronts the American farmer. There is practically no potash in this country for fertilizer use, and present indications are that the supply for this purpose will not be increased materially during the coming year. The investigations of the department and of the Geological Survey have shown the possibility of producing from American sources an ample quantity of potassium salts for domestic consumption. During the year no new sources have been discovered, but the conditions surrounding the development of known sources have been clarified considerably. There are four possible domestic sources of potash: The giant kelp of the Pacific coast from Lower California to Alaska; the alunite deposits, mainly in the mountains of Utah; the feldspathic rocks of the eastern part of the United States; and the mud of Searles Lake, in California.

Undoubtedly a large supply of potash salts could be obtained from the giant kelp. The kelp beds have been surveyed and a report, accompanied by maps showing in detail their extent and location, has been issued. Harvesting is accomplished easily, as the kelp grows in open water and barges fitted with mowing attachments can be used.

For utilizing the kelp several methods are feasible. It may be dried and ground. In this condition it contains all the salts originally present, which are mainly potassium chlorid and sodium chlorid. This material has ideal mechanical properties for use in mixed fertilizers. When the pure potassium chlorid is desired it is necessary to separate the juice from the organic material and then to remove the sodium chlorid. The latter can be done readily by recrystallization; but the separation of the juice from the organic material is more difficult, for the reason that the kelp is nonfibrous and in attempts to effect separation by filtration the filters become clogged and unworkable. The problems yet to be worked out commercially are the best methods of drying the wet kelp and of effecting the ready and efficient separation of the plant juices from the organic material. Investigation of these questions has proceeded far enough to indicate that their solution should not be very difficult.

But the development of a supply of potash from the kelp beds is still remote. There are several reasons for this. No one knows how long the European war may last or how soon potash from the former usual sources may be available. The American fertilizer companies heretofore have depended largely on the mining of phosphate rock and the manufacture of sulphuric acid for superphosphates. In these lines they are deeply interested financially. There is, furthermore, an element of doubt as to the control of the kelp beds. Just what jurisdiction the Federal Government has over them does not appear, and the Pacific Coast States have not legislated concerning those lying opposite their shores. It is unlikely, even in the event of an early peace, that there immediately will be a great supply of potash salts. It is a question how long it would take the former agencies to resume their usual operations. The experts of the department are of the opinion that under normal conditions, if the Panama Canal is utilized, potash from the kelp beds of the Pacific coast can be sold in the East under free competition.

Next to the kelp the massive alunites present the best possibilities as a source of potash. This material is decomposed by roasting, with the evolution of oxids of sulphur, and a residue consisting of alumina and potassium sulphate remains. From this residue the potassium salt can be obtained readily by leaching and evaporation. The process is simple. The fumes liberated could be used to manufacture sulphuric acid; but this commodity would be in little demand in the locality and some method of disposal or utilization would have to be devised. Alumina resulting as a by-product would be suitable for the manufacture of metallic aluminum; but this metal is produced by one concern, which controls sufficient bauxite deposits for its purposes and is not interested in other sources of alumina.

Work has been done along the line of producing potash from feldspar. This is commercially feasible if a salable by-product can be secured at the same time. The suggestion has been made by the Bureau of Soils that cement is a possible product from the feldspar treated to render the potash soluble. But the difficulty of marketing this cement in competition with thoroughly standardized products would be a great deterring factor.

The development of Searles Lake as a source of potash presents a number of unsolved technical problems. In addition, the question of title to the property is so involved that considerable time will elapse before it can be settled. In the meantime nothing can be done.

It is a matter of distinct regret that responsible business concerns have not made more earnest efforts to provide potash for agricultural purposes. Only recently, although the need of potash has been felt for a year, two companies have begun to develop a supply from alunite, but undoubtedly it will be some months before any considerable quantity from this source can be placed upon the market.

## MARKETING AND DISTRIBUTION.

Public interest in the problems of marketing and distribution still is keen. This is reflected in requests for information and assistance so numerous as heavily to tax the Office of Markets and Rural Organization. The department has continued, with the increased funds at its disposal, to develop its organization for studying these problems by adding to its staff the best trained men available. Very satisfactory headway has been made and results of much value have been secured.

It perhaps would conduce to clearness of thinking to realize that neither specific legislation affecting either marketing or rural finance nor direct attack on specific problems of marketing and rural credits by special investigators, even if the results of the studies were sound and convincing and received concrete application, can furnish a full solution of all the difficulties. It is not generally appreciated to what extent marketing troubles have their origin in irregularity of production or in lack of a stable and balanced agriculture; neither is it recognized that the difficulties which some expect to remove by rural credits legislation can be obviated only by improvement in conditions governing the conduct of farm operations, the trading in farm products, and the ownership and exchange of farm lands.

Irregularity in production in some instances arises from conditions over which there is no easy control. In years when a destructive disease prevails the yield from an acreage normally sufficient to supply consuming requirements is insufficient to meet the demand, and high prices follow. High prices also may result from reduced acreage, caused by low prices at planting time. High prices one year stimulate heavy planting the next. A solution for evils of this sort lies in stabilization of production. This can be brought about in part by the acquisition of fuller information as to the relation of acreage to consumption demands and to local marketing possibilities, the regional and local adaptation of crops and crop varieties, including the breeding and introduction of resistant varieties, and the control of crop pests.

In some sections, especially those which are new and developing, the difficulty is enhanced by the activities of real-estate promoters who succeed in directing farmers into localities, frequently remote from markets, where they successfully produce crops to the disposal of which they have given no consideration. In most instances disaster follows. Whether the States or the localities might not develop responsible agencies for the intelligent guidance of farmers in these directions is a matter for serious consideration.

One of the first questions that should be asked by a farmer who is considering a readjustment of his plans or who is undertaking tasks for the first time is whether the scale of his operations is such as to furnish full and economical employment to the farm family and to the work animals throughout the year. The minimum practical farm unit appears to be a farm of such size as will give adequate continuous occupation to the family. The unit for efficiency is somewhat larger than this. It has been found in one of our leading dairy sections that on farms of less than 100 acres the number of days' work for each individual employed is less than the full working capacity. In that locality a farm of this size gives full employment to two regular men, in addition to the extra help required at harvest time. Not only does the large farm utilize labor to better advantage, but it requires fewer animals to work a given area and is better supplied with labor-saving machinery. Farmers quite generally are beginning to recognize the fact that production is cheaper on large farms than on small ones and that the profits are greater for each unit of labor. There are thus forces at work to increase the magnitude of the farm business and statistics show that the agriculture of the country slowly is responding. Still, in the vicinity of large cities there is a tendency toward intensive farming, and on the Atlantic seaboard the acreage of improved land in the farm decreased from 69 acres in 1850 to 56 acres in 1910. In the cotton belt there has been a decrease since 1860 from 125 to 37 acres. This is due mainly to the breaking up of the large plantations. In the North Central States the proportion of land that can be devoted to intensive farming is relatively small, and in that section there has been an increase in the acreage of improved farms from 61 acres in 1850 to 113 in 1910.

As stated in the last annual report, there is much land in this country to be brought under cultivation; but this land in general is more difficult of access or more difficult to bring into use than that which is now cultivated. Future increase in production must come largely through better management of the land in cultivation. In a number of sections, however, there could be an extension of the land in use without much difficulty. This would result in greater economy and efficiency in the use of the labor of men and work animals. The Office of Farm Management has made a careful survey of a part of the Piedmont section of South Carolina. It finds that the size of the average farm there is 76 acres, while the area of land under cultivation in the farm is only 34 acres. It discovers that there are in this section 215 available workdays and that, partly because of the small size of the farm and partly because of the too exclusive reliance on one or two crops, there is a failure to utilize the available labor by approximately 50 per cent. Obviously, the direction of effort should be in the extension of activity over a larger farm area and of diversification.

Another vital question the farmer should ask himself is what he can do with his product when he secures it. Even if farms everywhere were of the requisite size for efficiency in production and reasonable diversification were practiced, the difficulties would not be solved. The farm unit which may be efficient for production still would have acutely to consider the problem of marketing. The farmer would not, through his own resources, be able to command easily the requisite transportation facilities or the daily information needed as to market conditions and the best near-by market, and in most cases would be at a disadvantage in bargaining with purchasers. The most promising solution seems to lie in the development of community cooperation or teamwork to determine what to produce, to employ the same methods, and to secure marketing information so as to enable producers to deal with buyers on an equal basis.

There are problems, however, which, under existing conditions, neither efficient individual nor community effort can solve. These can be reached only by legislation. There is much that individuals and groups of individuals may do in every community. In fact, they must always do the larger part. Self-help will be the rule in the future, as it has been in the past. Nevertheless, there are certain undesirable and unjust conditions which no amount of private effort, whether engaged in by farmers singly or jointly, can overcome. These conditions statutory enactments alone can correct. The better handling and storage of farm products, as well as trading on the basis of fixed grades and standards, wait upon proper legislation.

Among the difficulties of American farmers are lack of familiarity with, and remoteness from, the actual machinery of distribution and finance; absence of order or system in the conduct of their own business transactions; inadequacy of storage facilities for their products; and ignorance of what their products really are in the terms of market phraseology, as well as what they are worth. A producer of a manufactured article knows what it is and what it costs. He knows this better than the buyer. The reverse is true in agriculture. The farmer, as a rule, does not know what his product is or what he is selling, while the buyer knows what he is buying. The solution of these difficulties involves a better system of warehouses, with receipts which will be acceptable as collateral; the establishment of standards and grades of grain and cotton and other staple crops; the trading in the market upon standard types or grades, ascertained and fixed by the Government, with such supervision and control over the operation of exchanges as may be essential to secure justice for the producer, the consumer, and the intermediary.

For the accomplishment of these ends it seems desirable that the cotton-futures act, which has been in operation about a year, should be supplemented by a Federal permissive warehouse act, a cotton-standards act, a grain-grades act, and a land-mortgage banking act which shall inject business methods into the handling of farm finance and place upon the market in a responsible way reliable farm securities.

The Office of Markets and Rural Organization has definitely planned to keep in close touch with individuals and associations dealing with particular marketing problems over specific sections of the Union. Conferences with groups of producers interested in the same problems have been held and others will follow as occasion warrants, and it is believed that the establishment of advisory relations will have important results.

For a detailed account of the investigations and of the results of the activities of the Office of Markets and Rural Organization reference is made to its annual report. I shall touch upon only a few phases of the work.

### MARKET NEWS SERVICE.

Shippers and distributors of perishable products long have felt the need of accurate information concerning the quantities arriving in the large markets. Reliable records of shipments have been wholly lacking ; and it has been practically impossible to obtain accurate and comprehensive reports of current wholesale and jobbing prices.

The feasibility of securing and disseminating information of this character through a public market news service was tested during the year. The results point to the conclusion that a larger and better supported service should be given a trial. Several methods of securing market reports were tried out and their limits of usefulness established. Special telegraphic connections were secured, and representatives of the department in important shipping areas and in the larger markets kept both producers and dealers supplied by telegraph with the latest news of crop movements and prices. The service was rendered in succession to the growers and shippers of strawberries, tomatoes, cantaloupes, and peaches, and to the shippers of northwestern pears. In several of the more important districts the information has resulted in a wider or more intelligent distribution, the avoidance of gluts in specific markets, fewer diversions of cars in transit, and a consequent shortening of time between the producer and the consumer.

## THE COTTON-FUTURES ACT.

The United States cotton-futures act is the first general regulative statute passed by the Congress for the improvement of marketing conditions. It was enacted August 18, 1914, and became operative February 18, 1915. Sufficient time has elapsed to enable one to judge, in some measure, whether it is accomplishing the purposes intended.

The quotations of future contracts on cotton exchanges have a commanding influence upon the prices paid for spot cotton. Preceding the adoption of the law it was generally believed that these quotations were not true barometers of spot-cotton values, but usually were unwarrantably low and at times fluctuated unduly in response to manipulative influences. This condition was attributed largely to certain evil features which had crept into the practices on future exchanges as embodied in their contracts.

The act is a taxing statute, applicable to all contracts for the future delivery of cotton entered into on exchanges and like institutions. It aims to bring the future exchanges to a performance of their true economic functions by inducing them to adopt a form of contract free from evil elements.

Its motive is to eliminate unfair competition. It is in the interest alike of producers, merchants, spinners, and exchange members.

After the passage of the act, even before it became operative, the cotton-future exchanges in this country adopted the form of contract prescribed in its fifth section, and since, with negligible exceptions, they have traded exclusively under this form. Careful observation since the new form of contract came into use indicates that the statute has accomplished the chief economic objects anticipated by its framers. Future quotations now represent spot values more accurately; sharp and sudden fluctuations, such as commonly occurred under the old practices, have become much less frequent; and prices have been increasingly stabilized. The conclusion is unavoidable that these results are due mainly to the operation of the act.

Primarily these changes help the producer to secure more equitable prices. They also benefit the cotton manufacturer by giving him a truer index of the advance value of raw material. Likewise, they afford to all concerned in financing the crop and moving it to market a safer and more practicable hedge. In addition, the exchanges themselves have been somewhat relieved from the suspicion, which formerly justly attached in considerable measure, that exchange transactions were not always fairly conducted.

COTTON STANDARDS.—One of the important sections of the act is that dealing with standards. It authorizes the department to promulgate standards of cotton by which its quality or value may be determined, to be known as the "Official cotton standards of the United States." Acting under this authority, the department prepared a set of standards for white cotton, consisting of nine grades, as follows: Middling Fair, Strict Good Middling, Good Middling, Strict Middling, Middling, Strict Low Middling, Low Middling, Strict Good

Ordinary, and Good Ordinary. Pains were taken to make them comprehensive, and they are more truly representative of American cotton than any standards hitherto in use. They were promulgated December 15, 1914, and replaced the permissive standards adopted by the department in 1909. To the close of November 10, 1915, 529 full and 19 fractional sets had been distributed to exchanges, spot-cotton dealers, merchants, cotton mills, agricultural colleges, and textile schools in the United States; in addition, 16 full sets and 1 fractional set had been shipped to foreign countries.

While the compulsory use of the official standards extends only to contracts made subject to section 5, their acceptance and use have not been limited to the future exchanges. They have been voluntarily accepted in all the more important spot markets and form the basis of their dealings. The standards have given general satisfaction and the tendency toward acceptance of them has not been confined to this country. Committees and the board of managers of the Liverpool Cotton Association have approved them, though they have not been adopted by the association itself. The question of using both the official standards and the form of contract prescribed by the act is under consideration by the exchange at Bremen, and there have been negotiations on the subject with the exchange at Havre and a proposed exchange in Rotterdam.

It has not been possible, largely because of the lack of suitable type material, to establish standards for tinged and stained cotton. However, for convenience in passing on disputes, and in order to facilitate the work of classification of cotton proposed for tender on contract on the exchanges, the department has prepared tentative types for Low Middling yellow tinged, Low Middling blue tinged, and Middling yellow stained cotton. Duplicates of these have been distributed to the various exchanges for use pending the promulgation of the official standards.

Determination of disputes.—As an incident to the settlement of contracts made in the form prescribed by section 5 of the act, and as a means of bringing about uniformity in methods of grading and classification, the act imposed upon the department the duty of determining disputes involving grade, length of staple, and quality of cotton offered for delivery referred to it by the parties to such contracts. To the close of November 10, 1915, 1,002 disputes, involving 65,654 bales of cotton, had been submitted for determination. The costs of the 988 disputes decided amounted to $22,773.75. These were paid by the parties.

Spot markets.—The statute requires the department to designate the bona fide spot markets. It prescribes also that the averages of spot values in such of these as may be selected for the purpose shall, in the settlement of contracts made in compliance with the act, be the basis for determining actual commercial differences in the values of grades in future markets which are not themselves spot markets. Of the spot markets accepting the official standards, 13 have been designated as bona fide spot markets. Of these, 11 were selected for use in determining differences in values between grades of cotton delivered on contracts made on the exchanges subject to the act in places which are not spot markets. The latter furnish the department by wire daily quotations based on sales of cotton according to the official standards.

It is gratifying to note that a large majority of the people affected by the act, after having had an opportunity to observe its workings for the past eight months, are in sympathy with its general purposes and indorse what has been accomplished.

## WAREHOUSE LEGISLATION.

Investigations conducted by the Office of Markets and Rural Organization indicate that there is serious need of warehouse legislation. It would seem that the most desirable action on the part of the States would be the passage of laws which would guarantee the integrity of warehouse receipts. These laws should be uniform, so that the conditions governing such receipts may be the same throughout the country, thereby greatly increasing their availability as collateral for loans at distant banking centers. The uniform warehouse receipts act is now in force in 31 States.

In addition to the legislation that has been or may be enacted by the States, it is believed that the enactment of a Federal warehouse law would be of great benefit. The general interest in the subject is well shown by the inquiries the department constantly is receiving. In fact, many warehousemen, under the misapprehension that a bill on the subject considered by the last Congress actually had been passed, have asked the department to give them information as to how to comply with it. The proposed measure, which is permissive in character, would enable the Department of Agriculture to license bonded warehouses in the various States. It would promote the better storing of farm products, increase the desirability of receipts as collateral for loans, and therefore would be of definite assistance in financing crops. A Federal statute on the subject also would promote the standardizing of storages, of warehouse receipts, and of marketing processes.

## RURAL CREDITS.

The department has continued its studies of rural financial conditions in this country. It has investigated the relations of banks, life insurance, and mortgage companies to farm-mortgage credit and those of banks and merchants to the financing of farm operations. It has examined the recent legislation relating to personal-credit unions, extended its investigations of interest rates and other charges on farm mortgages and personal and collateral loans, and studied the possible forms of organization for personal-credit associations. It has issued bulletins bearing on the subject and has responded to many requests for information and assistance from individuals, groups of individuals, and State authorities.

The duty of preparing and reporting to the Congress on or before January 1, 1916, a bill or bills providing for the establishment of a system of rural credits adapted to American needs and conditions has been imposed upon a joint committee of the House and Senate. It is expected that as a result of the deliberations of this committee legislation will be proposed which will furnish a practical solution of the problem from the financial viewpoint.

It is generally recognized that the rural-credit problem is not a simple one. It is essentially complex. There is no single solution of it. Specific financial legislation on the part of the Federal Government, or of the State, or of both, will not furnish a full solution. It seems clear that there should be a Federal law providing for a land-mortgage banking system. It is a question whether by Federal action existing banking arrangements may not be so modified as to bring them into closer contact with rural communities and with individual farmers, giving farm collateral more readily and fully the advantages of the rediscount feature of the Federal Reserve Act. It also seems clear that legislation on the part of States permitting and encouraging the creation of personal-credit unions and removing any obstacles that may exist to the easier and more orderly handling of farm finance should be enacted. Reenforcing such agencies there would be at work all the great forces of the Department of Agriculture, of the land-grant colleges, and of the State agricultural departments. Their activities all contribute to make agriculture more profitable, to improve distribution, to eliminate waste, and to inject business methods into farming. In proportion as they accomplish these tasks they tend to solve fundamentally the whole problem of rural credits. Further Federal legislation vitally important to a more efficient agriculture, such as a cotton-standards act, a grain-grades bill, a permissive warehouse law, and proposals for the improvement of marketing conditions, also will contribute directly to its solution.

But even if all the desirable legislation were enacted and were put into operation there still would be a vast amount of constructive work to be done by individuals and groups of individuals, including the farmer, the business man, and the banker. If these assume a helpful and constructive attitude, they will furnish indispensable support for practical reforms. All these forces working in combination can effect marked changes in conditions, especially of the very class of farmers whose state most critically excites interest and concern.

## FUR-BEARING ANIMALS IN ALASKA.

Under the Alaska game law of May 11, 1908 (35 Stat., 102), regulation of the killing of certain terrestrial animals and of sea lions and walruses is committed to the Department of Agriculture. For several years the Congress has made appropriations to enable the department to make investigations and experiments in connection with rearing fur-bearing animals, including minks and martens. The fisheries of Alaska are under the direction of the Department of Commerce, which also administers the laws relating to fur seals and those governing the killing of minks, martens, sables, and other terrestrial fur-bearing animals in Alaska.

Early in 1915 a joint committee of the Departments of Commerce and Agriculture was appointed to devise a plan to simplify the administration of the Aleutian Islands Reservation in Alaska in respect to the propagation and protection of fur-bearing animals. The committee concluded that the problem was a broader one and reported that the present distribution of authority over fur-bearing animals between the two departments is unwise. It recommended that jurisdiction over land fur-bearing animals be committed to the Department of Agriculture and that over aquatic fur-bearing animals to the Department of Commerce. This action would adjust the powers of each department to its present functions and special equipment. It would place under the Department of Commerce not only fur seals and sea otters, as at present, but also walruses and sea lions which are now under the supervision of the Department of Agriculture; and under the latter department, land fur-bearing animals, including minks, martens, and sables, which are now under the jurisdiction of the Department of Commerce. The committee's report was approved by the Secretary of Commerce. This department also approves it and is of the opinion that the recommendations should be embodied in law at the ensuing session of the Congress.

## THE ALASKA GAME LAW.

The Governor of Alaska from time to time has recommended amendments to the Alaska game law. Some of the objects desired could be, and have been, accomplished by regulations prescribed by the department under existing law; others require action by the Congress. The department concurs in the following suggestions made by the governor and recommends legislation to give them effect: (1) That protection be withdrawn from brown bears. These are a menace to the sheep and cattle industries in Alaska and are so abundant as not to need further protection. (2) That the exportation of walrus ivory be wholly prohibited. This is essential to the preservation of the walrus, which forms an important source of food and clothing for the natives. The present restrictions upon the killing of this animal have proved inadequate to conserve it. (3) That nonresidents be required to obtain licenses to hunt deer and goats, as in the case of other big game. This is necessary for the proper supervision of hunting in the Territory. (4) That residents of Alaska be permitted to obtain two $10 and two $5 shipping licenses in each year. It is a useless hardship to restrict them to one of each of these licenses when under the law they may have more than one head or trophy of the animals they wish to ship. There may be ambiguity in the law. If so, it should be removed. (5) That residents of Alaska who wish to have specimens of big game mounted be permitted, without charge, to send them to the States to be mounted and returned. (6) That game wardens be authorized to procure warrants for the search of premises where game killed in violation of law may be secreted.

## TOBACCO STATISTICS.

During the year the present methods employed by the Departments of the Treasury, of Commerce, and of Agriculture in collecting tobacco statistics were considered by an interdepartmental committee. Its task was to devise a plan to eliminate duplication of work and unnecessary expense and to make the statistics more complete and more easily available to the public. The committee submitted three recommendations, which have been approved by the departments concerned. The first two require congressional action.

(1) That the act of April 30, 1912 (37 Stat., 106), authorizing the Bureau of the Census to collect tobacco statistics, be repealed, and that hereafter that bureau gather only such facts about tobacco as are incidental to the decennial census of agriculture and the quinquennial census of manufactures.

(2) That authority be given to the Bureau of Internal Revenue to extend the statistics collected by it to include the principal types of tobacco held by dealers at the end of each quarter, and by manufacturers at the end of the year, and to publish this information as quickly as possible.

**(3) That an annual report be prepared by the Bureau of Crop Estimates, which shall contain in elaborate form all the statistical information concerning tobacco collected by the Federal Government. The Department of Agriculture is authorized by existing law to publish reports relating to tobacco.**

The proposed action would result in economy and efficiency in the collection of tobacco statistics. A single report assembling all information collected by the Government relative to the tobacco crop would be of greater value than are the present separate fragmentary reports.

## THE STATES RELATIONS SERVICE.

Under the plan of reorganization of the department, approved by the Congress at its last session, the States Relations Service has been created. It has general charge of the department's business with the State agricultural colleges and experiment stations and also of certain related functions. It administers the Federal laws relating to the experimental and extension activities of the State institutions and coordinates them with the work of the department.

### THE AGRICULTURAL EXTENSION ACT.

The cooperative extension act of May 8, 1914, provides for a nation-wide system of instruction for the farming population in agriculture and home economics outside of the schools and colleges. It establishes a close copartnership between the Federal and State agencies in the organization and administration of the extension service. The department is under obligation not only to contribute to the formulation of plans of work which are to be mutually agreed upon, but also to assist the colleges in executing them in the most efficient manner. The law contemplates a unified extension organization in each State which will represent and be responsible to both the college and the department.

THE FIRST YEAR'S OPERATION.—During the year much has been accomplished toward creating and perfecting the administrative machinery. All the States have assented to the provisions of the act. One college in each has been designated to receive and to administer the funds. In several States where the land-grant institution is not coeducational an arrangement for the conduct of the work in home economics has been made with a college for women. In a few States having separate land-grant colleges for negroes a similar plan for extension work among people of that race has been adopted.

The institutions have created separate divisions or services and have brought under them all extension work in agriculture and home economics. Some of these divisions are not yet as clear-cut as they should be. In some cases laws or general administrative regulations adopted years ago have continued a confusing union of the extension organization with the experiment station. In 36 States a separate officer is in charge of the work, usually with the title of director; in 9 this officer also is head of the experiment station or of the college of agriculture.

The general lines of the extension system for the whole country have been well marked out. They embrace (1) the county agricultural agents, (2) the boys' and girls' clubs, (3) the movable schools, and (4) the supporting work of the college and department specialists.

THE COUNTY AGENT.—The colleges have accepted one of the fundamental features of the system developed by the department prior to the passage of the extension act. The experience of the last 12 years has demonstrated fully the value of the county agent as a means of bringing to the people on their farms and in their homes the results of practical experience and scientific research. There is general agreement that nothing is more important than the establishment in each county of permanent headquarters, in charge of a competent agent, who shall serve as the joint representative of the local community, the agricultural college, and the department. Through this arrangement the needs of the several communities can best be determined and the help of the State and the Nation most speedily and effectively rendered. A large part of the extension funds derived from all sources, Federal, State, and local, have been devoted to the maintenance and development of the county-agent system. There are now more than 1,000 counties which have men as agents, of whom 680 are in 15 Southern States, where there are also 355 women employed. On the whole, these agents have been very successful in securing the support and confidence of the people; and the tangible results of their work are encouraging. The personality of an agent is a large factor in determining his success. Understanding of the real problems of the region, sympathy with the people, ability to meet them on their own ground and to convey practical instruction in a convincing way, studious inclinations and habits, and business ability of a high order are essential.

COUNTY ORGANIZATIONS.—As the agent can not deal altogether with individual farmers, the problem of the organization of groups of farm people through which he may work is assuming great importance. Two general types exist. County associations, often called farm bureaus, have been formed. These are expected to take the initiative in securing local financial support for the agent, to join in his selection and appointment, and to stand behind him in his efforts to advance agricultural interests. Many of them include business and professional men as well as farmers. Their complex form has given rise to special problems. It is very apparent that, while the cordial sympathy and support of all classes are very desirable, the farmers themselves should control and in the end determine the character and functions of the organizations. Another type is the small community club. When a considerable number of these clubs exist in a county they have been confederated to form a county organization. The exact relations of both types to the extension system have not been fully defined, and they still must be considered as in the experimental stage.

WORK OF COUNTY AGENTS.—The work of the county agents is highly varied. In the 15 Southern States during the year direct demonstrations were made on 105,000 farms and instruction was given to 60,000 boys and 50,000 girls. Approximately 500,000 visits were made. The demonstrations covered practically every phase of southern agriculture. Nearly 3,000 silos were built under the direct instruction of the agents, and 13,000 pure-bred animals were purchased for breeding purposes. Under the direction of specialists, the agents assisted in hog-cholera control by organizing farmers and instructing them as to the administration of serum. In demonstrating the method, they inoculated 118,000 hogs. They also assisted in organizing communities for the prevention of other animal diseases and vaccinated 26,000 head of stock to show how such maladies as blackleg and anthrax might be combated. They aided department employees in tick eradication and were instrumental in securing the construction of 2,000 dipping vats. Many creameries and cream routes were established, and instruction was given in the feeding of dairy cattle and the marketing of milk.

More than 75,000 hillsides were terraced to prevent erosion. On thousands of farms the stumps were removed to permit better cultivation. Approximately 65,000 acres were drained. Nearly 3,000 demonstration home gardens were planted, and farmers were induced to purchase 132,000 improved implements. About 500 communities were organized and engaged cooperatively in some special work, such as breeding of live stock, purchasing and selling, handling of seed, and marketing of crops, and the improvement of farm practices. Many of these not only handled financial matters but also interested themselves in the social, educational, and rural betterment of the neighborhood.

The women county agents inaugurated work for women. Home conveniences, eradication of flies and mosquitoes, proper preparation of food, care of poultry, and marketing of eggs received attention. Approximately 50,000 homes were visited and given helpful suggestions, while 6,000 farm women made special demonstrations in home improvement.

In the Northern and Western States, where the work is comparatively new, the number of agents increased during the year from 219 to 350. These agents were instrumental in forming 875 local organizations, including farmers' clubs and associations for improvement of crop production, breeding of live stock, cow testing, and purchasing and marketing. They conducted 35,000 demonstrations with crops and live stock. They visited 76,000 farms, addressed meetings attended by 1,200,000 people, and assisted in developing agricultural instruction in 4,600 schools. About 72,000 farmers and their families attended short courses or movable schools. On the advice of agents 600,000 acres of tested corn, 280,000 acres of oats, 17,000 acres of potatoes, and 85,000 acres of alfalfa were planted. Approximately 2,000 registered sires were secured for farmers; 300,000 hogs were vaccinated for cholera; 2,000 farmers were instructed in the mixing of fertilizers, and 11,500 conducted demonstrations in the use of lime; more than 2,000 were assisted in keeping farm accounts, and, through exchanges organized by the agents, 2,300 were supplied with labor.

Boys' and girls' clubs.—Another important activity developed by the department and the agricultural colleges prior to the passage of the extension act and continued under the new machinery is the boys' and girls' club work. In the Southern States this undertaking is associated with the county-agent system; in the other States it is conducted independently. Through it the extension agencies are brought into close touch with the State and local school officers and teachers, who cooperate in the formation and management of the clubs.

In the Southern States 110,000 boys and girls were enrolled during the year. Among their activities the following are of special interest: Of the 60,000 boys many were interested in growing winter legumes for soil improvement. Four-crop clubs were formed in some of the States, with rotation on 3 acres of ground, to show the financial advantage of improving soil fertility. Many of the boys were organized into clubs to raise pigs and poultry. Fifty thousand girls were enrolled in the canning clubs. They were taught to make home gardens and to preserve for home use the garden products as well as the waste fruits and vegetables of the entire farm.

In the Northern and Western States the enrollment of boys and girls was more than 150,000. The leading club projects were the growing of corn and potatoes and garden and canning work. Through these clubs work in crop rotation, soil building, and the proper distribution of labor and enterprises throughout the year was undertaken by the boys and girls. Many members are working out three and four year rotations of crops and are spending their net profits in the purchase of pure-bred stock, hogs, poultry, sheep, and labor-saving machinery for both farm and kitchen. Numbers of them are buying land, thus early acquiring the habit of thrift and the sense of the dignity of land ownership. At 938 public demonstrations in the home canning of fruits and vegetables 118,000 persons were in attendance, including more than 50,000 women and 10,000 men. Of the 1,557 club members who attended the midwinter short courses at the colleges of agriculture, 968 had their expenses paid by the local people, institutions, or organizations as a recognition of their achievements.

EXTENSION SPECIALISTS.—The agricultural colleges for many years have done a large amount of extension work through the members of their faculties and the experiment-station staffs. At first this was purely incidental; but as extension activities have grown a more definite share of the time of specialists has been devoted to the work. More recently in some institutions certain officers have been assigned wholly to this service. These officers are expected to supplement the field work of the county agents, to furnish them advice and assistance, to give short practical courses of instruction, to conduct demonstrations along special lines, to prepare publications, to address meetings of farmers, and to answer inquiries. In general, it is their duty to gather up the available information in their several specialties, and particularly that of the State experiment stations, to put it into effective form, and to furnish it to farmers directly or through the county agents.

Specialists also are sent out by the department to work with the extension agents. Among these, for example, are specialists in dairying, animal husbandry, the use of hog-cholera serum, tick eradication, marketing of agricultural products, farm management, and the home canning of vegetables and fruits.

FUNDS FOR EXTENSION WORK.—For the current fiscal year the department funds available for this purpose aggregate $1,200,000. Under the extension act $1,080,000 is allotted to the States. The total Federal contribution thus amounts to $2,280,000. This is met by approximately $2,653,000 from the States. The latter includes $600,000 to offset the equivalent allotment of extension-act funds, $499,000 from additional State appropriations, $333,000 from college funds, $944,000 from counties, and $277,000 from local organizations and miscellaneous agencies. The total from both Federal and State sources is, in round numbers, $4,933,000. Of this sum about one-half will be expended in the demonstration and other activities of the county agents. Much of the work done by these agents bears directly on farm-home problems, but $550,000 has been allotted for distinctive instruction in home economics. Nearly $300,000 has been allotted specifically for activities among boys and girls, and yet this sum does not represent the total which will be used in extension work among young people. Approximately $1,000,000 will be devoted to the tasks of the specialists.

This general review of the national cooperative extension system shows that under the stimulus of the Federal act forces previously in operation have been strengthened and that altogether the movement for the practical education of the rural people has been broadened.

DIRECT EXTENSION FUNDS.—The appropriations made directly to the Department of Agriculture very largely are expended in developing the county-agent system. Contributions to the salaries of the agents are made on a plan which encourages local support. The system is well established in about one-third of the counties. This result has been attained mainly because the department has supported actively the movement during the period when the people were not fully persuaded of its value. Two-thirds of the counties have not yet placed the system on a permanent footing, and need the stimulating influence of the department and of the State college. The work in home economics as yet is in its inception. It is highly desirable, therefore, that the department have direct appropriations available for extension work. As Federal and State funds become sufficient to maintain all the agents, it may be desirable for the department to decrease gradually its contributions and to expend its appropriations more largely for the support of administrative officers and specialists who shall supervise the work of the agents, supplement their activities by special demonstrations, and give expert advice and assistance.

## THE NATIONAL FORESTS.

Nearly 25 years have passed since the first public timber reservation was made and 10 since the National Forests were put under the Department of Agriculture. Sufficient time has elapsed to determine whether their creation was wise.

The principal purpose in establishing the Forests was to secure sound economic and industrial development. Experience had shown that private ownership of large areas of timberland in most instances involved a sacrifice of public interests. Many private investments in forest lands are made for the mature timber and not for the purpose of growing new tree crops. The long time required to raise a merchantable product, the risk of loss from fire and other destructive agencies, the fear of burdensome taxes, and the uncertainty of market conditions usually make the holding of cut-over lands unattractive to capital. Hence the peculiarly public character of the problem of forestry.

FIRE PROTECTION.—Before the National Forests were created practically no effort was made to protect the timber on public lands from destruction by fire, notwithstanding the fact that the situation was peculiarly hazardous. During the last decade a fire protective system has been developed. Extensive improvements have been made, including more than 25,000 miles of roads, trails, and fire lines, 20,000 miles of telephone lines, many lookout stations, and headquarters for the protective force. In the year 1914, when conditions were exceptionally unfavorable, nearly 7,000 fires were fought successfully. They threatened bodies of timber valued at nearly $100,000,000, but the actual damage was less than $500,000. This work not only is saving public property; it is conserving the material for local economic development and for permanent industry. Furthermore, the results of the Federal system have induced many States to take up the work, and active cooperation between the two agencies has followed.

Use of timber.—The service rendered by the National Forests is not confined to protection from fire. The resources are being utilized to build up the country. They furnish the timber required by settlers, communities, and industries within and near their borders. This is obtained without charge by settlers, prospectors, and other local residents for personal use; at cost by settlers and farmers generally for domestic purposes; and at market value by individuals or corporations desiring to purchase it. During the last 11 years the number of permits for free timber to settlers has been multiplied 13 times and the number of sales 27 times. The amount cut annually by settlers under these permits is more than four times what it was in 1905, while that under commercial sales has increased eightfold. In the three years since sales at cost to settlers and farmers were authorized by the Congress their annual volume has increased enormously. Nearly 51,000 lots were disposed of during the last year. Probably not less than 45,000 persons or corporations obtained timber directly from the National Forests.

More than half of the timber now cut annually is used in the vicinity of the Forests. This includes all that taken free and under sales at cost, and approximately 45 per cent of the commercial cut. Hundreds of mining districts throughout the West, from small projects requiring an occasional wagonload of props or lagging to the great copper district of central Montana, which consumes about 380,000 pieces of mining timber annually, are supplied. Railroads also are furnished a large part of the ties and other material required for their lines in the Rocky Mountain regions. A million and a half ties now are cut from the Forests yearly. Throughout the West timber is taken from them for near-by towns, irrigation projects, hydroelectric power plants, and the like, while thousands of individual settlers obtain it for fuel and farm improvements. On the Alaskan coast the salmon packers, towns, and settlers use 40,000,000 feet a year from the Chugach and Tongass Forests.

The National Forests also meet the demands of the general lumber market. More than 300,000,000 feet are cut annually for the nation-wide trade. Since 1908 there have been taken from them 5,000,000,000 board feet of wood and timber products.

Not only is timber amply supplied and are future resources safeguarded, but the ultimate damage to the West through impairment of its water resources, vitally important for irrigation and other purposes, also is prevented. The damage would have been of a kind to force at a huge cost the undertaking of protective works against erosion, torrent formation, and floods. Other countries have been compelled to do this. At the time the National Forest policy was entered upon the agencies making for destruction were actively at work. A range overgrazed and forest fires which burned unchecked were diminishing the water-storage value of the mountains and accelerating soil destruction and removal. The evils averted and the benefits secured through only a decade of protection and regulated use constitute a gain of great moment.

GRAZING.—Although the National Forests were established primarily to conserve the timber and to protect the watersheds, it has been the consistent aim of the department to develop all other resources. Grazing, mining, agriculture, water power, and recreation all are fostered. One of the most important of these is grazing. The greater part of the summer range in the Western States is in the Forests. Under the regulated system the forage is utilized fully, without injury to the tree growth and with adequate safeguards against watershed damage. There were grazed last year under pay permits 1,724,000 cattle and horses and 7,300,000 sheep and goats. Several hundred thousand head of milch and work animals were grazed free of charge, and more than 3,500,000 head of stock crossed the Forests, feeding en route, also free of charge. Not including settlers who have the free privilege or persons who have only crossing permits, there are 31,000 individuals who have regular permits. During the year ended June 30, 1905, there were only 692,000 cattle and horses and 1,514,000 sheep and goats on 85,627,472 acres. The number of animals now sustained in proportion to the area of the Forests is 50 per cent greater than it was 10 years ago. Since 1905 the number of persons holding grazing privileges has increased nearly 200 per cent. This is due in part to the enlarged area of the Forests, but can be attributed principally to wider use by settlers and small stockmen. When the regulated system was established the Forest ranges, like the open public lands to-day, rapidly were being impaired. The productivity of the land for forage in most places has been restored and everywhere is increasing; the industry has been made more stable; stock comes from the Forests in better condition; range wars have stopped; ranch property has increased in value; and a larger area has been made available through range improvements. It is probable that 100,000,000 pounds of beef and mutton are sold each year from herds and flocks occupying the ranges. That the Forests have promoted the development of the stock industry is indicated. This is appreciated by stockmen, and they are urging that a similar system of range regulation be extended to the unreserved public lands. But it is not merely the stock industry that has been benefited. The grazing privilege has been so distributed as to promote healthy community growth, increase settlement, prevent monopoly, and diffuse prosperity. In other words, public control has served social as well as economic ends.

WATER POWER.—The National Forests contain approximately one-half of the water power of the West. The department for nearly a decade has been issuing permits for its development. Unfortunately, the present law does not authorize the granting of permits for fixed periods. It should be amended, and recommendations to this end have been made repeatedly by the department. While authority to grant term permits undoubtedly would aid water-power utilization, the fact remains that development, practically to the extent of the market, actually is now taking place on the Forests. In the Western States power development has advanced proportionately very much more rapidly than in the East, where land is privately owned. The amount of water power used in the generation of electricity by public utilities corporations, street railway companies, and municipalities has in the last decade increased 440 per cent in the West, or more than twice as fast as in the remainder of the country. There, in proportion to population, four and one-half times as much water power is used as in the remainder of the United States, and nearly three times as much as in the Eastern States.

Of the existing 1,800,000 water horsepower in the Western States, 50 per cent is in plants constructed in whole or in part on the Forests and operated under permit from the department. Plants under construction will develop about 200,000 additional horsepower, while over 1,000,000 more is under permit for future construction. The chief obstacle to further immediate water-power expansion is the lack of market, for plants in operation in the West now have a surplus of power of which they can not dispose.

MINING DEVELOPMENT.—The National Forests are open to prospecting and the initiation of mineral locations just as is the open public domain. When a mineral claim comes up for patent it is examined on the ground to discover whether the terms of the mining laws have been complied with. This examination is designed to prevent fraud, and no one with a valid claim need fear it.

The existence of the Forests gives certain advantages to the miner. It is not on the great private timber tracts in the western mountains that the miner is prospecting. It is only on the Forests and other public lands open to mineral locations, if he makes a discovery, that he can get title merely through conscientious compliance with the mining laws. Many mines to-day are securing their timber from the Forests, and because of its protection and continued production a steady supply at reasonable rates is assured.

RECREATIONAL USES.—The National Forests are used also for health and recreation. They embrace the high, rugged mountains of the West, the scenery of which is unsurpassed. These great areas are open to the whole Nation. Already more than one and one-half million people visit them annually for recreation, and this number is increasing rapidly as roads and trails are built, making new points accessible. The lands bordering on the hundreds of lakes and streams in the Forests offer attractive sites for camps and for permanent summer residences. Authority now exists to grant term leases for the erection of summer homes, hotels, and similar buildings, and large numbers will take advantage of this privilege. Public ownership has protected the natural beauty of these areas. Their recreational value has been maintained and increased through road and trail construction and through intelligent study of the needs of the public.

IMPORTANCE TO AGRICULTURE.—To the agricultural interests of the West the proper handling of the Forests is of great importance. The Forests conserve and increase the supply of water. Fire protection gives property an added value, as do roads, trails, and other Government improvements. In fact, the existence of the Forests gives a permanence to agriculture that does not exist where the timberlands are privately owned.

What has happened in the older lumber regions of the country is well known. The scattered agricultural areas were occupied as long as the timber lasted and lumbering operations furnished markets, kept up roads, and gave employment when the farm could be left. But with the exhaustion of the timber, the devastation of the lands by fire, the abandonment of the logging roads, and the moving of the industry to some new region, the farms, too, were abandoned and whole townships depopulated.

AGRICULTURAL SETTLEMENT.—It is the department's policy to make available for settlement all lands which are chiefly valuable for farming. In order to open such areas a careful classification is being made. Large tracts found to be valuable for agriculture or unsuited for permanent Forest purposes are eliminated. During the last five years about 14,000,000 acres have been released. In addition, individual tracts are classified and opened to entry upon application of home seekers. Since the work was begun more than 1,900,000 acres have been made available for the benefit of 18,000 settlers.

In short, lands within the Forests really adapted to agriculture are being occupied as homesteads under favorable conditions. While the lands suited to settlement are classified and opened to entry, those which are not chiefly valuable for agriculture are retained in public ownership. The alienation of timberlands under conditions that will lead not to settlement but to speculation and to increasing the holdings of private timber owners would defeat the very purposes for which the Forests were established.

The real agricultural problem within and near the Forests is to make possible the successful occupancy and development of the lands that already have been opened to entry or actually patented. The mere private ownership of land does not insure successful use of it. In Oregon and Washington alone there are about 3,000,000 acres of logged-off land, much of it agricultural in character, now lying idle. In this condition speculative holding of the land for higher prices plays a large part. Another cause is the lack of transportation facilities. A settler may clear land and raise crops upon it, but he is helpless if he can not market them. There are great areas of fertile land unused to-day on this account. In many sections near the National Forests pioneer conditions still exist. The population is small and the task of road building is beyond the means of the residents. There is little or no demand for timber and the receipts from the Forests which go to the community are small. The fact that the public property is not subject to taxation makes such communities feel, and very justly, that the Forests are not contributing enough to local development.

This situation should be changed. Assistance should be given in the building of roads to bring into productive use the resources of such regions. Therefore the suggestion contained in the last annual report is repeated, that upon a showing of public necessity appropriations be made for specific roads and similar improvements, to be charged against the State's future share of receipts from the Forests. Such action would promote the local development of agriculture and other resources.

To secure the maximum use of the lands still remaining in Federal ownership further legislation is needed. There must be a constructive program which will promote development and safeguard public interests. The aim should be to make these properties more useful, available to greater numbers, and effectively instrumental in building up industries.

EASTERN FORESTS.—The wisdom of retaining the western forests under national control is indicated by the course which the Federal Government has found necessary in dealing with the mountain lands of the East. These lands passed into private hands directly from the States. Their present condition furnishes an example of what happens when mountain lands are controlled by individuals. The results became apparent years ago. Erosion, loss of the soil, and clogging of streams with silt and stone followed the removal of the timber. Stream flow became more irregular, and great losses resulted to property through increased floods.

So serious was the situation that it was brought to the attention of the Federal Government as early as 1900. Various methods of handling the problem were proposed and discussed, but it became apparent that the Government must purchase and control the more strategic areas. With this end in view the act of March 1, 1911, established a National Forest Reservation Commission and authorized it and the Department of Agriculture to proceed with the acquisition of lands at the headwaters of the navigable streams. It was necessary in the East to acquire by purchase the same class of lands which in the West were put into National Forests merely by proclamation. An appropriation of $11,000,000 was made for these purchases, to be expended during the fiscal years 1910 to 1915. It has not been practicable to use the entire sum; a portion lapsed before contracts of purchase could be completed. The commission has approved the purchase of lands in 16 localities of the southern Appalachian and White Mountains, involving a total area of 1,317,551 acres. This has been acquired or bargained for at an average price of $5.22 per acre.

The funds made available under the first appropriation are nearly exhausted. In its report to the Congress for the fiscal year 1914 the commission recommended that purchases be continued until about 6,000,000 acres shall have been obtained and that the Congress authorize appropriations through another five-year period at the rate of $2,000,000 a year.

As fast as the eastern lands are acquired they are placed under an administration similar to that of the western forests. Already on these lands, of which 348,275 acres had been paid for on June 30, 1915, headway has been made in overcoming fires and in starting the forests toward increased productiveness. Situated for the most part near densely populated communities, the resources of these lands are readily available. There is immediate need for their timber, mineral, water, and forage resources and also for their development as recreation grounds. Purchases should continue until areas sufficient to be influential in protecting the region are acquired.

ALASKA FORESTS.—Two of the 155 National Forests are in Alaska. The Tongass comprises approximately 15,000,000 acres in southeastern Alaska, while the Chugach, covering the timbered area about Prince William Sound and thence westward to Cook Inlet, contains about 5,500,000 acres. Most of the timber on them is of the coast type, Sitka spruce, hemlock, and cedar being the predominant species. On the Tongass single spruce trees not uncommonly reach a diameter of 6 feet, a height of 200 feet, and a yield in merchantable material of 20,000 board feet. Limited areas carry 100,000 board feet to the acre, and 40,000 to 50,000 feet over considerable areas is common. The timber is accessible, of excellent quality, comparatively easy to log, and close to water transportation. The presence of available water power will facilitate the development of wood-using industries. While the Chugach Forest has less favorable conditions for timber growth and a less heavy stand than the Tongass, nevertheless in it there is a large amount of merchantable Sitka spruce and hemlock, which will have an increasing importance for railroad construction, mining, and other industrial purposes. Large areas have an average stand of 15,000 to 20,000 board feet to the acre; and the best run as high as 50,000 feet. The volume of timber on the two Forests is estimated to be between sixty and eighty billion board feet, about one-eighth of the total estimated quantity on all the forests.

In accordance with the general principle of organization adopted for all the forests, but to a greater degree than elsewhere because of their remoteness, the administration of the Alaska forests is decentralized to permit the prompt transaction of business and ready response to the needs of the public. Aside from matters pertaining to the alienation of land about 98 per cent of the business of the two Alaskan forests is handled by the local force.

Approximately 40,000,000 feet of timber are cut annually under sales. Settlers secure free, without permits, the timber needed for personal use. Mining locations are made as on the public domain. Agricultural land is classified and placed at the disposal of settlers. Every encouragement is given to the use of lands for miscellaneous purposes. In some places there is an increasing use of land for canneries, stores, and other enterprises. As a rule these localities are not yet in a position to incorporate as towns and to take advantage of the town-site laws. It would be a public benefit if authority were granted to permit the sale of such lands after examination and classification by the department. Definite provision, however, should be made against alienation of those which are chiefly valuable for water-power sites or are needed for handling the timber resources or for other public purposes.

The Alaska National Forests are designed to serve the same broad public purposes as the forests in the States. It is the aim to administer them in a spirit of service to the people who are struggling to build up communities and homes and to establish industries. They should be preserved and should continue to be administered in connection with the other forests of the Nation.

I have been compelled in this, as in previous annual reports, to confine myself to certain topics. It would be impossible within reasonable limits to review much of the important work of the different bureaus. Only by careful study of the separate reports of the chiefs can one form any satisfactory idea of the extent, variety, and nature of the problems which the department is attacking.

Respectfully,

D. F. HOUSTON,
*Secretary of Agriculture.*

The PRESIDENT.

# THE COOPERATIVE PURCHASE OF FARM SUPPLIES.

By C. E. Bassett,

*Specialist in Cooperative Organization, Office of Markets and Rural Organization.*

A CAREFUL examination of the methods of a large manufacturing establishment shows that the success is due largely to the ability to buy its raw material at the lowest prices, to sell its finished products through an efficient distributing system, and to take advantage of more economical methods of production. By means of a thorough organization of all its forces it overcomes much waste, inefficiency, and extravagance, and every branch of its work is a part in one great system. The small factory buys its materials in small quantities for cash, or credit extended on high rates of interest, or from brokers or small dealers, but the large factory arranges for a line of credit at low rates and maintains a purchasing department, which buys so carefully in such large quantities as to secure close prices from producers. The quantity of these materials purchased justifies the expense of a testing department to make sure that all purchases are up to the standard.

The average individual farmer is himself a small manufacturer, working with the forces of nature to produce certain farm products. There are two distinct ways by which he may hope to improve his financial condition—first, by lowering his cost of production, and, second, by increasing the income received from the sale of his products.

It has been found from the surveys made by the Office of Farm Management that the minimum efficient unit is the farm that furnishes adequate employment throughout the year to the average farm family. Experience has also shown that combinations of farmers for cooperative production are rarely advisable, but the farmers in a given section usually produce the same assortment of crops, and their farm needs for supplies, such as implements, fertilizers, seeds, spray materials, and packages, are practically the same. Many of these requirements can be anticipated, but the common practice is to depend upon local dealers to carry these standard articles in stock, awaiting the day when the farmer wishes to use them. In many sections it is customary in the spring for farmers to ask the local merchants to charge the amount of all purchases until harvest time in the fall. This practice compels the merchant to buy in small quantities, shipments being received under relatively high local freight rates. He must buy on credit or else borrow large sums of money, for the use of which he must pay interest. The dealer must pay cartage charges and must own or rent stores and warehouses. He has taxes and insurance to pay on his stock; he must employ clerks to wait on his customers, and pay liberal advertising bills to attract trade. Frequently there are expenses for the delivery of goods. Usually where credit is extended an advance in prices must be made to cover the occasional loss due to bad accounts.

If customers need or require such forms of assistance, they have no right to complain if the merchant includes a reasonable charge for the service in making the price for his goods. In fact, much of the complaint about present-day high prices is unreasonable, as increased prices frequently are due to the increased service required by consumers and rendered by dealers. If people insist upon being waited upon, they must expect to pay those who thus serve them.

## OBJECTS OF COOPERATIVE PURCHASING.

### ELIMINATION OF WASTE.

In the farmers' general plans for improving their condition it is necessary for them to take advantage of the cooperative principles for conducting their business, to the end that they also may be able to eliminate waste. Efficiency is the watchword, and the farmer should pay for necessary and efficient service only. In case he finds that he can serve himself more efficiently than others are serving him, if he can install and operate his own business machinery, arrange to pay cash, or furnish his own credit, he should do so. The trade should and usually will consent to meet him on this thoroughly sound basis.

If it is good business and entirely proper for manufacturers, wholesalers, and retailers to unite in their respective organizations, not to control prices or restrain trade, but for greater business efficiency and to eliminate waste, what argument should induce farmers to refrain from similar action to improve their business? What can the manufacturer gain by such organization which the farmer can not? Is the average intelligence of the manufacturer less than the average intelligence of the American farmer? If it is advisable for the manufacturers and dealers to federate into State and National associations for the above-named purposes, by what line of reasoning do some conclude that it is unnecessary or absolutely improper for the farmers to organize even on a community basis?

### SECURING OF HIGH-GRADE GOODS.

The farmer is interested first of all in securing goods of standard quality. Large amounts of spraying and fertilizing chemicals are now used on many farms, and it is essential that these materials be of high grade and free from impurities. The amount purchased by each grower is not sufficient to warrant having chemical analyses made, but where full carloads are purchased by a group of farmers a composite sample may be taken, and one analysis will show the average quality of the whole.

### STANDARDIZATION OF SUPPLIES.

Another effect of cooperative purchasing has been to bring the farmers together in the use of the same make of implements, fruit packages, etc. One western fruit association agreed on one style of power sprayer where a dozen or more were formerly sold. (See Pl. I.) Not only did they save a large sum on the purchase price, but one line of repairs now supplies their needs, and parts can be kept on hand for sale to all members at a great saving.

Another association secured the adoption of one style of fruit package where no less than eight had formerly been in use. Manufacturers who formerly had to keep in readiness eight styles of basket forms and eight kinds of supplies can now devote their entire force and factory to the making of one style, thus lessening the cost of making and decreasing the selling price, while insuring a constant supply.

The advantages to be gained through a farmers' cooperative marketing association have been mentioned in a previous yearbook article,[1] but it must be remembered that in all cases the advisability of a cooperative organization depends upon the probability of more efficient service being secured thereby.

## FORM OF ORGANIZATION FOR PURCHASING ASSOCIATIONS.

The buying of farmers' supplies is a much more simple undertaking than the selling of farm produce, because naturally the trade is much more willing to exchange goods for money than it is to part with money for goods. Therefore a buying association requires a less complicated form of organization than does a marketing association. Persons with good business experience should be selected for the officers, the secretary usually acting as business manager. A board of five or seven directors, that number including the executive officers, should conduct the business. All persons who handle any funds or property should be bonded. A small annual membership fee is often advisable to provide for the expenses of the association. Each purchaser may also pay an additional small per cent in excess of the cost of the goods he orders to cover salary of manager, postage, printing, and any other expenses connected with the business. Paying the manager a small per cent on the business handled encourages him to work for members and orders, but the total amount paid him in any one season or year should be limited to a reasonable sum, based on the character of the business and the value of the services rendered. Unless a supply of goods is to be kept on hand, no warehouse or store building is needed. Fertilizers, spraying materials, packages, feed, coal, and other supplies that are bought in carloads should be delivered direct from the car to save expenses and possible loss in rehandling. It must be kept in mind that the object is to secure goods of highest quality and to buy such goods at the lowest price by buying under contract in large quantities for cash.

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[1] Bassett, C. E., Moomaw, C. W., and Kerr, W. H.: Cooperative Marketing and Financing of Marketing Associations. U. S. Department of Agriculture, Yearbook 1914. (Yearbook Separate 637.)

## MANNER OF TRANSACTING BUSINESS.

### USE OF ASSOCIATION AS A CLEARING HOUSE.

The association secures sealed bids from dealers or manufacturers for supplying such of their goods as the association members may desire to buy from time to time during the season. Whenever a member wishes some of the contract commodities, he draws up his order from the confidential circular price list, which is supplied to all members by the association, and sends it direct to the secretary or manager. With it he sends a draft or the cash to cover the amount of the order. There are two methods for handling these orders. Either the secretary mails the order to the wholesaler with a draft to cover the cost, and the shipment is made direct to the member, or the secretary may collect from the members their orders and cash to cover them, then by combining these orders he may have full carloads shipped to a central point, thus saving freight. In this case the members take their goods direct from the car.

The association list price to members may be a few cents higher than the contract price, this slight difference being enough to cover the office expenses of handling these accounts. The advantage of this plan is that it requires no capital on the part of the association, and the danger of any loss is avoided. The disadvantage is that dealers hesitate to quote prices much below the market unless they are assured of certain definite orders. Experience has shown that, although associations may do their utmost to keep these prices confidential, some members will boast to nonmembers of their lower prices and in many cases members have made use of these confidential price lists to hammer local dealers down to even lower prices. Such practices demoralize the market and cause dealers to refuse to bid for business of this class. If members are willing to give advance orders for their season's needs and pay cash, the association manager can go into the market and secure bids to fill these definite orders at the very lowest cash price.

### ATTITUDE TOWARD LOCAL MERCHANTS.

The cooperative plan of buying farm supplies should not disregard the local dealer. The merchant who in the past has extended credit and rendered other valuable services should be the first considered when there is cash to be expended. The cooperative committee should go to such local firms and explain that their members are now in condition to perform certain service which formerly has been rendered by the dealers, and, in view of their less exacting requirements, they expect to save to themselves the price formerly charged for that work. In several cases the merchants have welcomed such an arrangement, and it resulted in the creating of an excellent local spirit. The local dealer furnished the goods at a very small profit, because he was not obliged to render the usual service. In many cases the local dealer has the exclusive agency of the most desirable lines of goods, and this plan makes it possible to save on the exact class of goods wanted, but in such a transaction the local dealer should be willing to act as the agent of the buying association so as to work for the interests of its members.

The possible saving to be accomplished through cooperative buying is illustrated by the fact that in one case a State cooperative association assembled so many orders for spraying chemicals that they were able to buy very much cheaper than were regular dealers. As a result a large number of retail dealers in that State joined the association, so as to buy their store supplies of these chemicals through this association.

## THE ORDER FORM BILL OF LADING.

Groups of Pennsylvania farmers have been doing very good work with a slightly different plan. Instead of sending the cash with the order to the secretary or manager, each member deposits with his local bank the necessary cash or arranges for the proper credit. The bank certifies that the money is there awaiting the shipper's draft. This certificate is then forwarded with the order to the secretary of the association, who presents these facts to the shipper. He ships the goods to his own order, attaching a draft and the indorsed negotiable bill of lading, also an invoice showing the unit price, weights, and totals of the shipment. The shipper fills in the proper entry in the bill of lading, requiring the railroad to notify the ultimate consignee of the arrival of the goods.

The chief point in this plan is the order form bill of lading. This is negotiable, represents ownership of the property, and must be surrendered, properly indorsed, to the railroad before the goods will be delivered. The exchange handles no money except its annual dues, extends no credit, and orders no goods except for cash in the bank. Therefore there is no liability on the part of a member except for his own purchases; no opportunity for loss, because his money remains in his home bank until he receives his goods; no chance for graft, since the transaction clears through his home bank. The bank is paid a small fee for its service.

### COOPERATIVE WAREHOUSES.

While the safest and most economical purchasing plan is that of collective or joint purchasing, with delivery direct from the car, this enterprise sometimes results in the acquisition and use of a warehouse when the business grows large enough to require it. Farmers' clubs often make use of an extra room in their hall for the storing of repair parts and surplus stocks of farm staples. But this plan of buying in advance of the farmers' needs involves extra cost to cover rent of a warehouse, capital or credit for buying goods, cartage from station, insurance, expense of salesman in charge, etc. Any association that carries a large stock of supplies on hand for its members is almost sure to experience losses caused by a drop in market prices, or, on account of a change in the fancies of members, it may have a stock of some goods on hand for which there is no demand. For example, when arsenate of lead became popular as an insecticide one association was caught with a quantity of Paris green on hand. The demand for Paris green became so slight in that locality that the market price dropped, and the association suffered a severe loss. Such supplies as coal, salt, lime, lumber, implements, seed, flour, and feed often are handled economically by farmers' cooperative elevators for their members, but as far as possible delivery should be made direct from the car.

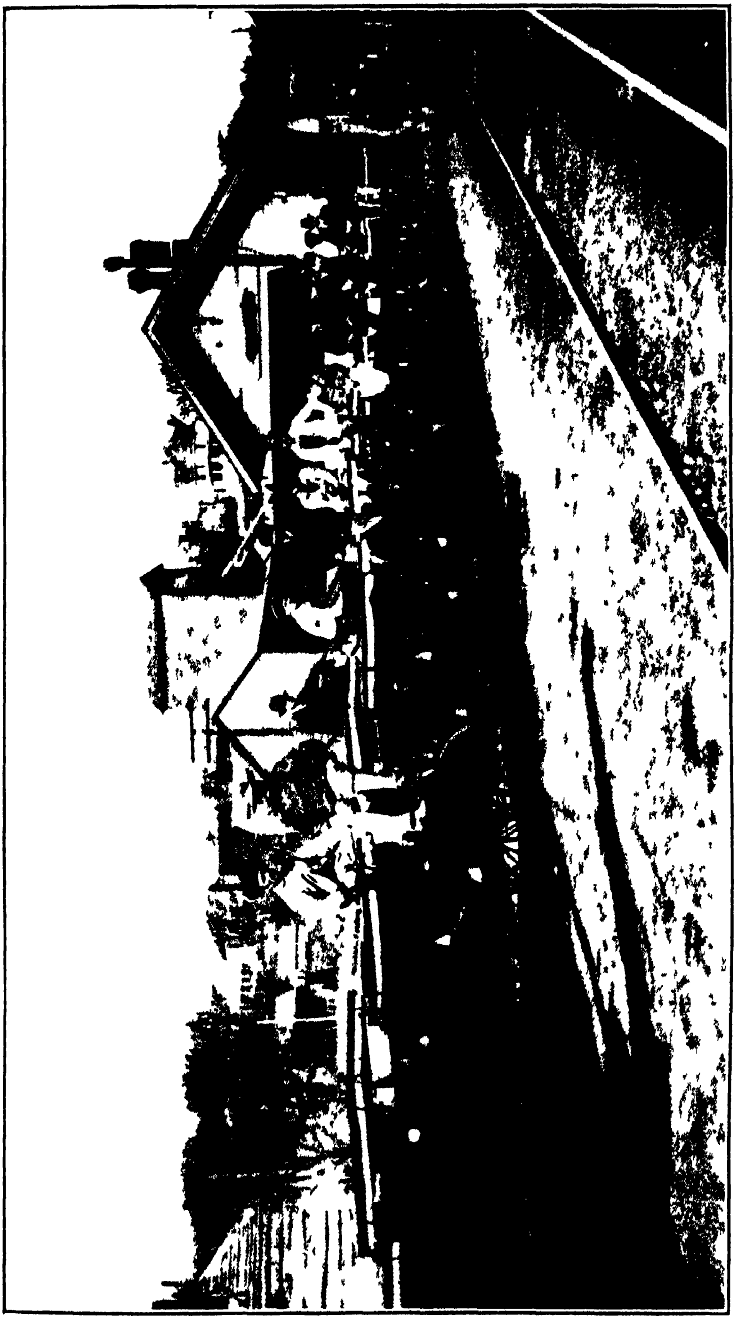
### COOPERATIVE MANUFACTURING.

Some associations assist their members by still another line of work involving the manufacture or simple mixing of fertilizers; the making of barrels, boxes, or other containers; and the manufacture of spraying materials, cement posts, or blocks. Cooperative work of this sort requires experience, large capital, and careful business management. It should be attempted only when these factors are present and when market prices are so extremely high that there is a reasonable probability that cooperative manufacturing will result in materially improved quality, substantially lower prices, or both.

## COOPERATIVE STORES.

Attempts of consumers, both rural and urban, to establish cooperative stores have been quite common in this country for many years, and in a small proportion of cases they have met with success. In a majority of instances the result has been failure, due largely to a lack of business experience with resultant poor management, small capital, inadequate accounting and auditing systems, and a lack of continued loyalty on the part of the members themselves. Some of the successful cooperative stores have gradually been taken over, through purchase of stock, by private parties and are now cooperative in name only. One of the most successful cooperative stores on record is owned by miners who earn good wages, are paid regularly, and live in a section that has to bring in most of what it consumes. Most of these miners are foreigners whose wants are for staple rather than fancy goods. They do their own delivering and need and expect no credit. Such a condition is most nearly ideal for the success of such a store, differing materially from those cases where the proposed patrons demand assortments of fashionable goods and are accustomed to receive credit, frequent delivery of goods, and similar expensive services. In any community which already has several stores it is better to buy one already in existence and convert it into a cooperative enterprise rather than attempt to establish a new business.

While some cooperative stores sell goods at a small fixed percentage above cost, enough to cover all running expenses, experience indicates that a more satisfactory way is to sell at regular local prices and divide the profits at the end of the year or at certain regular periods on the basis of the total amount purchased by each patron. This manner of dividing profits marks the difference between a cooperative store



THIRTY-FOUR POWER SPRAYERS PURCHASED COOPERATIVELY BY A WESTERN FRUIT ASSOCIATION AT A SAVING OF OVER $1,000.

and one which is privately owned. In a privately owned store profits are divided on the basis of capital invested.

The chances for success in conducting cooperative stores are not as numerous or as great as many imagine. They should be attempted only after a most careful survey of local conditions and then only when sufficient capital and high-grade management are available.

## SELLING PRICES.

Irrespective of the cash or credit element, goods may be sold to the members either at cost, plus office expense, interest, etc., or at regular retail price.

While the method of selling at cost plus the office expense, interest, etc., is liked by the members, who thus pay the smallest amount of cash for their goods, many manufacturers, contrary to the antitrust laws, insist on a specified retail selling price for their goods, claiming that this is necessary to prevent "price slashing" and ultimate demoralization of the retail trade in their commodities. This sentiment existing among some of the manufacturers makes it difficult to buy from them without agreeing to their terms of resale.

Experience has shown that, after contracts have been made with dealers or manufacturers for certain supplies, other dealers who were unsuccessful in bidding for the contract sometimes arrange to meet these prices or offer even better terms. While these lower prices are the indirect result of the action taken by the cooperative association, nonmembers profit by the cut in prices. However, the temporary "slashing of prices" demoralizes trade and destroys the inducement for nonmembers to unite with the association. For this reason several associations practice the plan of selling at regular retail prices. This plan is preferred by many because it is less disturbing to local trade. At the end of the season the profits may be divided among the members and nonmember patrons in the form of dividends, based on the total amount of purchases each has made through the association. It is believed by some that the paying of full dividends to members and half dividends to nonmember patrons tends to attract more nonmembers to join. Experience has shown that outsiders are attracted quite as much by low prices at time of creeper and grapes—had borne a fair crop of fruit. It was the one thing for which our crows were grateful, and in times of severe weather was all that stood between them and actual starvation.

Another black pair may be imagined as flapping laboriously by, flying low, and taking advantage of every knoll, tree, or even corn shock which might serve to break in the least degree the force of the head wind against which they are toiling. Their passing "caw" is answered and the birds in the tree tops take wing and fall in behind. This company travels probably a mile, when another group rises from a clump of sheltering pines and joins them. A stretch of open country a little farther on gives in greater perspective a view of what is taking place. Ahead are other crows, usually grouped in small flocks, all struggling against that relentless wind. All are traveling in the same direction and in precisely the same unmarked path. Behind follow still others in a more or less broken line, undulating and conforming as nearly as possible to all inequalities of the landscape. An hour or more of such labor and the once rather broken line has become more populous. A steady stream of black forms comes from as far as one can see, passes by, now boisterous, now silent, and then struggles on in the opposite direction until the birds become mere dots in a sinuous, dusky path.

And that is not the end. For miles more they travel. In fact, not until sunset or after is there an indication that the destination is near. Our low-flying black horde, producing a distinctly audible, silken rustle with its many beating wings, approaches a certain heavily wooded area over the center of which hovers a hazy, cloudlike mass—a countless, gnatlike swarm of clamorous crows. The seemingly tireless birds, at last nearing their goal, extend their massed ranks over a broad stretch a hundred yards or more wide. Their individual calls are lost, becoming part of the growing din as their batlike forms are swallowed up in this constantly growing maelstrom.

From probably three or four lines of flight similar to this one is the gathering fed. From the front, just skimming the tops of the trees, enter those struggling against the wind; on the sides are birds awkwardly tacking against a lateral gale; and from the opposite direction, sailing high on slowly moving pinions, are those individuals which have had an easy time on their inward journey. With remarkable skill these latter glide downward in winding courses, and at times make sheer perpendicular drops of a hundred feet or more. A spread of the wings deftly arrests their fall and they alight on some slender limb. The formerly bare branches of hickories, oaks, and chestnuts now strain heavily with the weight of closely perched birds. Occasionally an overladen branch cracks, scattering its load of startled crows, which rise, add their calls to the now deafening roar above, and join in the whirling rabble to seek new resting places.

The ever-increasing clamor has by this time become a veritable babel. Medleyed with the more familiar corvine notes are multitudes of others, some weird to the extreme. One can hear a rattle as of a stick run rapidly along a picket fence, the irritating metallic notes of a defective tin horn, soft liquid mutterings, catlike cries, and a thousand other calls which defy imitation and beggar all description.

As the darkness deepens, less and less is heard of the open-throated "caws." A gradual softening of notes has almost imperceptibly been toning down the din throughout the whole assemblage. Occasionally squads of a hundred or more black forms take wing and follow back along one or another of the now rapidly diminishing lines of flight, returning after a short sortie. It would seem almost as if they were taking account of the laggards and those delayed by the elements.

When practically all illumination in the western sky has vanished and when in walking one has to raise a guarding hand against obstructing twigs, a lull comes rather abruptly over the assembly. Desultory gurglings alone are heard and only a few restless birds are flying about. (Pl. II.) The impression is received that this odd performance has come to a close and the birds have settled for the night; but, suddenly, without cries of alarm, and with only the rustle of wings to attract attention, a squad of several hundred passes overhead. Others of greater proportion follow close behind. Crows in the tops of the more distant trees are seen taking wing, and then, like an oncoming gust of wind, the impulse sends those directly overhead into the air. The multitude of black forms quite perceptibly obstructs what little daylight still remains, and for several minutes the sky is thus darkened. The flight this time is but a short one. A dense stand of pine silhouetted in black, possibly a quarter of a mile away, is rapidly absorbing the incoming thousands. A few moments more and the batlike forms have entirely disappeared; only an occasional gurgle or muffled rattle betrays their presence. The crows have arrived at their roost and have settled for the night.

The foregoing covers only half of that odd daily winter performance of our common crow. The morning witnesses essentially a reverse of what has taken place the night before, though the departure of the gathered thousands on their daily search for food takes considerably less time.

## THE ROOSTING HABIT.

While crows, even in the nesting season, are more or less clannish, their flocking habit is most highly developed during the colder months. Soon after the nesting season one may expect to see evidences of it, but in the latitude of Washington, D. C., it is not until the end of September that roosts are well established. At this time the migratory habits of these birds have brought together in a comparatively small area the bulk of the crow population of North America, so that the territory from Connecticut south to Virginia and westward to beyond the Mississippi River harbors these birds in extremely large numbers. Their roosts are occupied with considerable fluctuation in population till the advent of milder weather in March, when the numbers rapidly decrease.

That the roosting habit has been long established, and is not a trait acquired since the activities of man have so decidedly altered the character of the winter range of these birds, there can be little doubt. Probably the oddest and one of the most populous of the earlier-known crow roosts was that of the "Pea Patch," an island in the Delaware River. Wilson's account[1] of the tragic destruction of this colony gives us a good idea of one of the calamities that may befall a highly gregarious species.

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[1] Wilson, Alexander. American Ornithology, Vol. IV, pp. 82–84, Philadelphia, 1811.

> The most noted Crow roost with which I am acquainted is near Newcastle, on an island in the Delaware. It is there known by the name of the Pea Patch, and is a low flat alluvial spot of a few acres, elevated but a little above high water mark, and covered with a thick growth of reeds. This appears to be the grand rendezvous or head quarters of the greater part of the Crows within forty or fifty miles of the spot. It is entirely destitute of trees, the Crows alighting and nestling among the reeds, which by these means are broken down and matted together. The noise created by those multitudes, both in their evening assembly, and reascension in the morning; and the depredations they commit in the immediate neighbourhood of this great resort, are almost incredible. Whole fields of corn are sometimes laid waste by thousands alighting on it at once, with appetites whetted by the fast of the preceding night * * *.
>
> The strong attachment of the Crows to this spot may be illustrated by the following circumstance. Some years ago a sudden and violent north-east storm came on during the night, and the tide, rising to an uncommon height, inundated the whole island. The darkness of the night, the suddenness and violence of the storm, and the incessant torrents of rain that fell, it is supposed, so intimidated the Crows that they did not attempt to escape, and almost all perished. Thousands of them were next day seen floating in the river; and wind shifting to the north-west, drove their dead bodies to the Jersey side, where for miles they blackened the whole shore.
>
> This disaster, however, seems long ago to have been repaired; for they now congregate on the Pea Patch in as immense multitudes as ever.

A variety of situations, differing widely in the character of vegetation, are acceptable as sites for crow roosts. Pine and other evergreens are most frequently chosen, though records of crows passing the night in groves of deciduous trees, as oaks and maples, are common. A large roost in Crawford County, Kans., is in a heavy stand of catalpa. That crows roost among such low vegetation as reeds or tall grass has been noted, while in some cases even in severe weather the birds have been known to gather on the ground in open fields or on exposed sand bars.

### NUMBERS.

Many attempts have been made to estimate the number of birds which gather at some of these roosts. In doing this observers usually follow one of two courses: one is to count the birds as they arrive in the evening along their definite lines of flight, of which three to six are usually found at each roost; the other is to count the birds in a limited portion of the assembly after they have settled for the night and then estimate the total for the known area of the entire roost.

The daily fluctuation in the number of birds at one of these gatherings, due to change in weather, together with variation caused by birds stopping at some local roost when they have been overtaken by darkness, makes the computing of their number difficult and, in large measure, unsatisfactory. The wide variation of the estimates made by several observers at the same roost readily shows the uncertainty of results. Furthermore, the impression made upon one not very familiar with the sight of the gathering thousands is quite likely to be an exaggerated one.

A roost at Arlington, Va., was supposed to have contained at the height of its occupancy from 150,000 to 200,000 birds. These figures have been averaged from the records of a number of observers and may be regarded as reliable. The "Arbutus" roost, near Baltimore, contained in 1888, according to the account of Mr. C. L. Edwards,[1] a population of more than 200,000. The St. Louis roosts, about 1886, contained from 70,000 to 90,000 crows. One at Peru, Nebr., at the same time had 100,000 to 200,000. Other roosts numbering about 200,000 were recorded about the same year in New Jersey at Hainesport, Merchantville, Reedy Island in the Delaware River, Bridgeboro, and Centerton; and in Pennsylvania at Davis Grove and Camp Hill. Some of these roosts are still occupied and are said to harbor thousands of birds. A roost at Woodridge, near Langdon, D. C., which appears to be the successor to that observed some years ago at Arlington, Va., is reported by Mr. A. H. Howell, of the Biological Survey, to have harbored in the winter of 1910–11, 270,000 birds. Mr. Howell estimated that fully 100 crows a second entered the roost at the height of the influx, and added that as this would be 6,000 every minute, if the same rate continued for three-quarters of an hour, which is about the time occupied by the gathering of the clans, 270,000 crows would be established for the night within an area of 5 to 10 acres. He says that while this estimate may be short of the actual number it certainly does not greatly exceed it. Dr. S. D. Judd observed this same roost in February, 1901, and estimated 100,000 as its population at that time.

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[1] Edwards, C. L., Amer. Journ. Psychology, Vol. I, No. 3, p. 454, May, 1888.

What was considered to be the successor to the Woodridge roost, and the one upon which the writer made observations, gave a much smaller number of birds. Observations made on January 8, 1911, under a line of flight coming from the east, indicated that from 1,800 to 1,900 birds flew past. The four lines of flight entering the roost would probably give a total population of about 7,500. On this occasion a strong wind was blowing at right angles to the direction of flight, and, as this caused the birds to spread out in a pathway fully half a mile wide, doubtless many were overlooked. About the first of January, 1912, the crows forsook this roosting place, and, again resorting to the previous site near Woodridge, combined with a small number which had been using this place. The writer visited this roost on January 28, 1912, and estimated the number coming from the north at about 6,500. This would probably mean that the whole roost was occupied by from 25,000 to 30,000 birds.

## LOCATION OF ROOSTS.

In response to a circular letter requesting information on the economic status of the crow, issued by the Biological Survey in December, 1911, considerable data bearing on the location, size, and character of crow roosts occupied during the winter of 1911–12 were secured. Upward of 290 correspondents submitted notes of this nature, and while it can not be claimed that the data obtained are anything but a mere fragment of knowledge, the compilation of these facts brings together much more information on the problem of winter crow roosts than has heretofore been collected.

On the map on page 90 (fig. 1) is recorded a total of 170 roosts of varying size. This shows the areas in which a rather restricted migratory movement has assembled a large part of the crow population of North America. East of the Appalachians and grouped on the lower watersheds of the Potomac, Susquehanna, Delaware, Hudson, and Connecticut

Rivers are many of the most populous roosts, some of which are reported to contain over 100,000 birds. Here the open water maintained by most of these streams throughout the winter, together with the extensive tidal flats within easy reach of these rendezvous, assures the crows of a fairly ample supply of food. In the Middle West a greater area of favorable winter habitat has permitted the birds to establish their roosts over a much broader area. As in the East, the winter crows of the Mississippi Valley have selected a region well supplied with their customary winter food. Here the roosts of greatest size are found in southern Indiana, central Illinois, and westward along the Missouri River, while eastern Kansas and northern Oklahoma also support vast numbers. During fall and early spring the northern States from Maine west to the Plains harbor many migrants, and these form at times temporary roosts of considerable size. From December to the middle of February, however, the birds which frequent these States are comparatively few in number and their roosts seldom contain over a few hundred individuals. The more important of these are located along the coast of Maine and in west central New York in the vicinity of Seneca and Cayuga Lakes. In the South the largest colonies are found along the Atlantic and

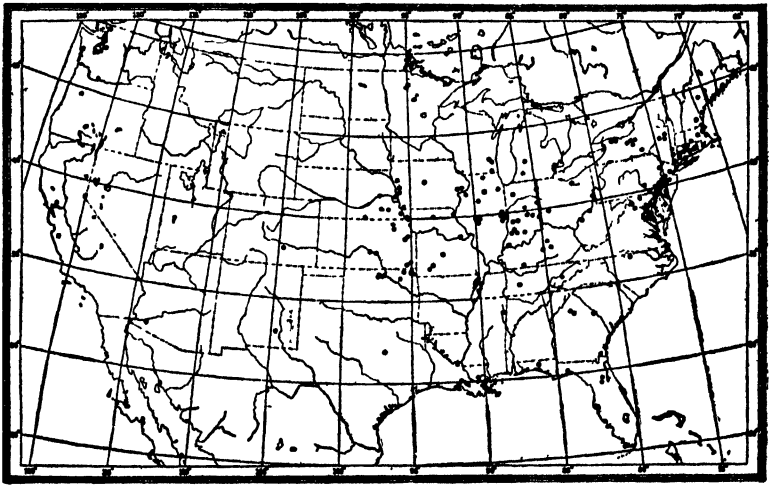

FIG. 1.—Map showing location of crow roosts occupied in the winter of 1911–12.

Gulf coasts, and are probably made up of birds, resident in southern States, which have congregated at favorable spots. Fish crows often form the bulk of the population of southern roosts, and in fact are common in colonies as far north as Maryland. On the Pacific coast, owing probably to the milder winter climate, the roosts are found at higher latitudes, the coastal region about Puget Sound being an area particularly well supplied.

## CROW ROOSTS KNOWN TO HAVE BEEN OCCUPIED IN THE WINTER OF 1911-12.

As a means of presenting such additional information about winter roosts as could not be shown on the map (fig. 1), the following tabulation will be of interest. In presenting it, attention must be called to the fact that in most cases the number of birds recorded is a mere guess by the observer. Some of these estimates are obviously exaggerated. On the other hand, many records of small groups of crows (50 to 100), especially in northern States, have not been noted. This list must not be considered in any way a census of the winter crow population of the United States, as there doubtless are many roosts which have not been recorded.

Arizona: Santa Catalina Mountains.
California:
  Monterey. 500 birds.
  Petaluma. Large numbers on 5 to 10 acres of eucalyptus grove.
Colorado: Beulah. Several hundred on 100 acres of fir and spruce on "Old Craggy." Not used every winter.
Connecticut:
  Bethel.
  Cedar Mountain, near Hartford. 3,000 on 2 acres of hemlock grove.
  Jewett City. 600 birds.
  New Britain. Thousands on 350 acres.
  Norwich. 2,000 to 3,000 in pine and hemlock.
  Plainville.
  Redding. 2,000 on 1½ acres on southern slope of mountain.
  Ridgefield. Large numbers.
  Wethersfield. Thousands of birds in cedars.
  Windsor Locks. 500 on 2 acres of maple, oak, hickory, chestnut, and pine.
Delaware:
  Milford. 1,000 to 3,000 on 25 acres of swamp.
  Wilmington.

District of Columbia: Woodridge (near Langdon). 20,000 to 30,000 on 10 to 15 acres, mainly pine.

Florida:

De Funiak Springs. Few birds in shortleaf pines in swamps.

Orange Lake. 30,000 on 36 acres (on island). These are fish crows.

St. Marks.

Georgia:

Athens. Two roosts, 100 and 200 each, in pine and oak.

Augusta. Thousands on 50 to 100 acres of gum swamps and rice fields.

St. Marys. Many thousands on 10 to 20 acres of cedars in river swamp.

Illinois:

Auburn. 5,000 on 10 acres of walnut grove.

Champaign County. 10,000 to 12,000 in "Bowse's Grove."

Dudley. Large numbers.

Henry. Two roosts, 400 and 1,000 each on 3 acres.

Joliet. 200 on 264 acres.

Newman. Thousands of birds.

New Windsor. 1,000 in oak and other hardwood trees.

Ottawa. Thousands on 4 acres of pine.

Rockford. Birds on 2 or 3 acres of second-growth oak.

Springfield. Several roosts consisting of large numbers.

Vermilion County.

Indiana:

Amo. 300 on 8 acres of second-growth timber.

Asbury Chapel (near Bicknell). 500 to 1,000 in cedars.

Berne. Large numbers.

Boston. 3,000 on 3 acres.

Evansville. Birds in willows.

Greencastle. Large numbers.

Greenfield. Several hundred thousand on 5 to 10 acres of elm, soft maple, and oak.

Lyons. 1,000 to 2,000 on 100 acres.

Mitchell. Thousands of birds.

Monon. Thousands of birds.

Richmond. 10,000 to 50,000 on 5 acres.

Rushville. 3,000 on 40 acres.

Russellville. A few thousand on 10 acres of low growth elm, basswood, and beech.

Springville. Thousands on 2 acres. On island.

Iowa:

Clarinda. 1,000 birds.

Modale. Million birds (?).[1]

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[1] The question is the writer's.

- Onawa. Tens of thousands of birds on bar land in cottonwoods and willows.
- Pioneer. 1,000 birds.
- Salix, Woodbury County.
- Springdale.
- West Branch.

Kansas:

- Clinton. 500 birds.
- Girard. Large numbers on 2 square miles of catalpa grove.
- Labette County.
- Lawrence. 7,000 to 10,000 on 40 acres of oaks.
- Maize. 6,000 to 10,000 in cottonwoods.
- Onaga. Two roosts. 200 and 400 in walnut trees.
- Wichita. Several roosts. 500 to 2,000 on one-half to 4 acres of cottonwoods.

Kentucky:

- Guthrie. Thousands of birds in cedars and oaks.
- Harrodsburg. Large numbers.
- Lexington. Several roosts, 2,000 to 5,000 each.
- Versailles. 1,000,000 birds (?).[1]

Louisiana:

- Avery Island. Several roosts, a few thousand each, in live oak, sweet gum, and wax myrtle.
- Baldwin. Birds on 3 acres of oaks and pecans.
- Mansura. Thousands of birds on 1 square mile of willows in lake.

Maine:

- Bowdoinham. Birds on the coast.
- Farmington.
- Mount Desert Island. A few birds.
- Pine Point.

Maryland:

- Avondale (Carroll County). 50,000 birds.
- Halethorp. 50,000 to 60,000 birds.
- Hill's Bridge, near Upper Marlboro. Birds on 200 acres of pines.
- Laurel.
- Liverpool Point. 1,000 birds.

Massachusetts:

- Crow Point (Plymouth County).
- Framingham. 500 birds.
- Gloucester. Large numbers in white pines.
- Hampden. 2,000 in mixed growth of trees.
- Ipswich. Several hundred per acre on a few acres of pines.

Michigan:

- Kalamazoo. 500 birds.
- Rockford. Birds on 4 acres of oaks and pines.
- Wayne, Wayne County. 300 birds.
- Wayne County. 200 in evergreens.

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[1] The question is the writer's.

Mississippi: Muldon. Several thousand birds.

Missouri:
- Billings. Millions of birds (?).[1] In timber and old cornfield.
- Bucklin.
- Corning. 1,500 on 1,000 acres of willows on sand bar in river.
- Iberia. Birds in oaks.
- La Grange. Not a large number of birds. On islands in river.
- New Haven. 1,200 on 4 to 8 acres of willows and box elders on an island.
- Springfield.

Nebraska:
- Lincoln. Several roosts of several thousands each on 10 acres.
- Linwood. 600 to 700 birds.
- Omaha.
- Peru. 100 in willows on bank of river.
- Pleasant Dale. Birds on 6 to 7 acres.
- Republican River. Several hundred in cottonwoods and willows.

New Hampshire: Barrington (Strafford County). 1,000 in white pine grove in valley.

New Jersey:
- Bernardsville. Thousands of birds.
- Princeton.
- Ringoes. Tens of thousands of birds on 20 acres.
- Salem. 25,000 on 20 to 30 acres of oaks.
- Yorktown. Thousands of birds.

New York:
- Auburn. Large numbers of birds.
- Ballston Lake, Saratoga County. 300 to 500 birds.
- Bergen.
- Gardiners Island. 300 to 2,000 in mixed woods.
- Ithaca. Birds in three roosts, aggregating 2,000 to 2,500, in junipers.
- Kinderhook. Birds on 5 to 10 acres of hemlocks.
- Lisle. Birds in beeches.
- Mount Sinai, Long Island. Several hundred birds in cedars.
- Pattersonville. Thousands of birds in evergreens.
- Rochester. A small number of birds.
- Schenectady. 75,000 in low pines.
- Varick, Seneca County.
- West Point. Several thousand birds.

North Carolina:
- Mayodan. Thousands of birds.
- Old Currituck Inlet.
- Swan Island. 5,000 birds; another estimate, 10,000 birds.

Ohio:
- Bridgeport. 1,000 on 3 acres of bushes covered with grapevines.
- Dayton. Many hundred birds.
- Oberlin. Several thousand birds.

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[1] The question is the writer's.

Oklahoma:
  Fairland. Two roosts, 300 and 500 birds, respectively, in oaks.
  Kinnison. Multiple millions (?).[1]
  Otoe. Three large roosts.
  Stillwater. A few large flocks.
Oregon: Salem. Several roosts of 100 to 200 birds in fir.
Pennsylvania:
  Bensalem (Bucks County).
  Buckingham. 300 to 500 on 5 acres of chestnuts on sandy ridge.
  Coatesville. Many thousand birds on 8 to 10 acres of chestnuts and oaks.
  Doylestown. 25,000 to 30,000 birds; another estimate, 10,000 in oaks and chestnuts on hilltop.
  King of Prussia.
  Lincoln University, Chester County. Large numbers of birds.
  Mountville. 1,000 birds.
  Radnor.
  Shawnee on Delaware. Thousands of birds on 2 acres of hemlocks and pines.
  Shepherdstown. 2,000 birds.
Rhode Island: Prudence Island. Several hundred birds on 18 to 20 acres of maples and birches.
South Carolina: Ashley River, near Charleston. 2,000 to 3,000 birds in pine woods on island in marsh.
Tennessee:
  Columbia. Birds in cedars.
  Knoxville (south of). Tens of thousands on small acreage of cedars and pines.
Texas: Waco. 1,000 in cottonwoods.
Vermont:
  Burlington. Several hundred on 5 to 8 acres of white pines.
  Vergennes. A few birds in evergreens.
Virginia:
  Leesburg. 2,000,000 to 20,000,000 birds (?)[1] in second growth of hardwood.
  Newport News. Birds on 10 acres of pines.
Washington:
  Bellingham. Birds in firs, cedars, and alders.
  Camas. Thousands of birds in numerous roosts among fir timber.
  Cohasset Beach (Chehalis County). 150 to 200 birds in spruces.
  Seattle. Many birds in wooded swamp.
West Virginia:
  Bens Run. 300 to 500 principally in yellow pines.
  Letart.
  Parkersburg. Several hundred birds.

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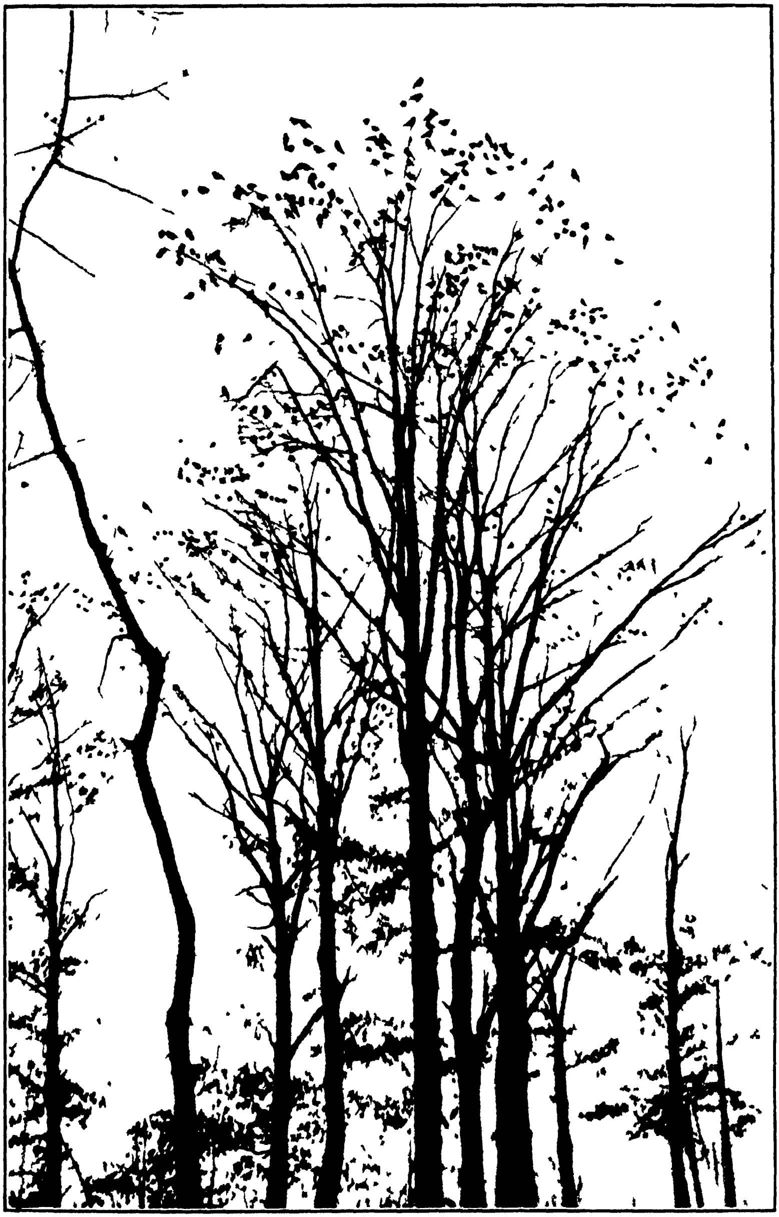
[1] The question is the writer's.

Wisconsin:
  Genoa Junction. Thousands of birds in oaks and birches.
  Oconomowoc. Thousands of birds in tamarack swamp.
  Pewaukee. 2,000 to 3,000 on 80 acres.

## WINTER FOOD OF CROWS.

Aside from the purely ornithological interest which these wonderful gatherings of crows possess, considerable economic importance is attached thereto. As in the case of some other highly gregarious species, the damage inflicted is upon a restricted area. Frequently only a farm or two will lose heavily and at times a single field will be stripped, while surrounding areas remain untouched. It is fortunate indeed that crows do not gather in such compact hordes for the express purpose of feeding; little would then be left of outstanding corn shocks; straying poultry would pay dearly for their liberty; and even larger farm animals might suffer from the combined attacks of hungry thousands. But even as it is, in some sections there is just cause for complaint in the vicinity of these roosts. This is especially true in severe weather or on dark, gloomy days, when the birds wander but little from their favorite rendezvous, so that the farms of the immediate vicinity are compelled to support an abnormal number. Damage is greatest in autumn and early winter, when considerable shocked corn is available. In regions where sorghums are raised extensively, as in Kansas and Oklahoma, the damage is at times great.

A very good idea of the winter food of the crow has been derived from examination by the Biological Survey of hundreds of stomachs and also from the débris composed of undigested matter found in quantities at large roosts (Pl. III). From the beginning of October to the end of February animal food comprises less than 18 per cent of the total. Several of the important ingredients are strongly indicative of the aquatic environment in which these birds are found so commonly during the colder months. Crawfish, mollusks, remains of dead fish, and carrion of all sorts are regular items of diet. The crow's consumption of these may be considered to be of a neutral or slightly beneficial nature. In late fall and early winter grasshoppers are eagerly sought, and in sections where the young of certain



ROOSTING CROWS.

These crows have gathered in deciduous trees preparatory to moving into a clump of near-by pines. Photograph taken after sundown with an exposure of several minutes The air was filled with flying birds, but only those remaining stationary throughout the exposure made a full photographic impression.

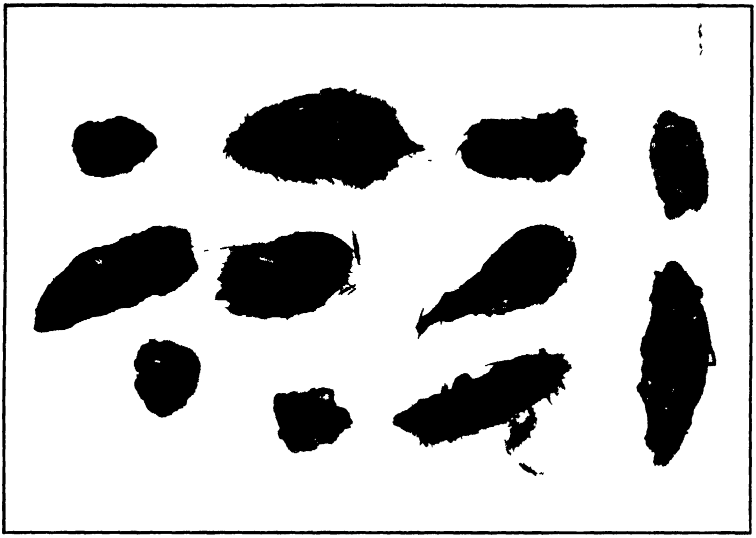


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FIG. 1.—CROW PELLETS.

These consist of masses of undigested food and are disgorged in great numbers at winter roosts.

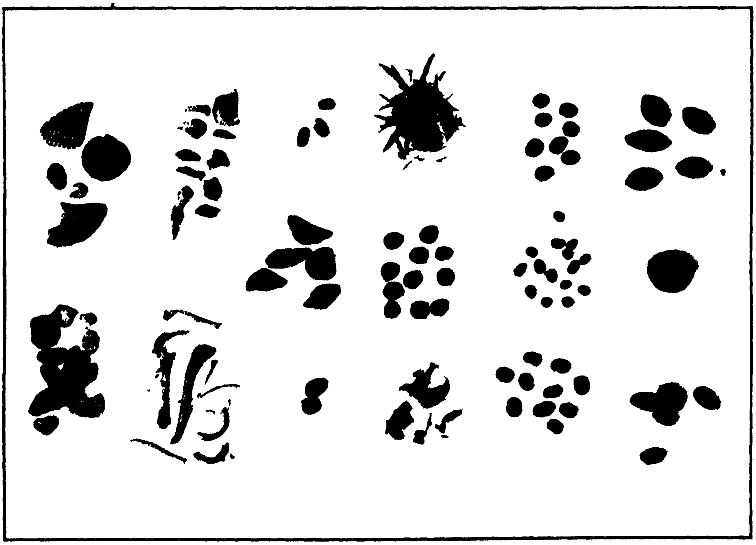

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FIG. 2.—CHARACTERISTIC INGREDIENTS OF CROW PELLETS.

Collected at the Woodridge, D. C., roost in February, 1912. Included are the wing covers of clover-leaf weevils, fragments of crawfish, land and marine mollusks, bones of a small rodent, fragments of larger bones (carrion), hulls of corn and wheat, seeds of greenbrier, sour gum, flowering dogwood, poisonous and nonpoisonous sumac, wild grape, knotweed, an acorn, and gravel.

species are to be found throughout the colder months their remains appear in the stomach contents of crows the year round. Small mammals up to the size of a cottontail, an occasional chicken or wild bird, and a small proportion of hibernating insects of various orders fill out the scanty animal diet.

Roughly speaking, corn comprises about half of the crow's food during the winter months—a startling quantity when considered in the abstract, and were it not possible to interpret this percentage properly, the case of the crow would be well-nigh hopeless on this score alone. Most of this corn, however, is consumed during December and January, when, hard pressed, the birds are forced to forage diligently for every stray kernel of waste grain. Much of the corn taken at this time may be classified under this head. In our Southern States, where shocked corn may frequently be found standing in fields throughout the winter, losses from crows result, especially when the shocks are not well built and snugly tied.

Of wild fruits and seeds the crow consumes a variety during the colder months. These constitute fully a fifth of his winter's food, and in regions where waste corn can not be had they furnish the main food supply. Among these are the various nonpoisonous sumacs, poison ivy, poison oak, greenbrier, pokeberry, bayberry, dogwood, sour gum, wild cherry, and acorns.

Unlike those of many of the more granivorous species, as sparrows and gallinaceous birds, crows' stomachs are not suited to the grinding and assimilation of hard substances. Consequently the food value of many of these wild fruits ceases when the soft outer portion has been removed. To aid in even this process of grinding, we find that crows swallow large quantities of sand and gravel. After a quantity of such fruit has been eaten and the digestible portions assimilated, the remains are disgorged. This disgorged material usually assumes an elliptical or spherical form similar to the pellets ejected by birds of prey. The disintegrated remains of countless numbers of these pellets, the accumulated ejecta of thousands of birds, form a deposit of sometimes an inch or more in depth at long-established roosts.

## SEED DISTRIBUTION.

The fact that embryos of disgorged seeds are seldom injured and that a large part of those ejected are capable of germination, brings up an important economic problem—that of the distribution of seeds by birds. Birds generally are recognized as one of the potent factors in the extension and perpetuation of our plant life, and when the seeds of valuable trees and shrubs, or even those of harmless plants, are involved the birds no doubt are performing a valuable service. On the other hand, the dispersal of seeds of the poisonous varieties mentioned must be considered undesirable.

In the case of the crow the danger of introduction of these weeds is of course greatest in the immediate vicinity of winter roosts. A series of nine pellets gathered at one of the former roosts, near St. Louis, and examined by the writer, contained an average of 36 seeds of poison ivy or poison sumac for each pellet. Along with these were seeds of nonpoisonous sumac, grapes, dogwood, hackberry, a wild bean, and a buckthorn. A mass of material gathered at a roost near Baltimore contained 156 seeds of poison ivy and sumac, estimated to be 25 per cent of the bulk of the pellets. These also contained 11 seeds of nonpoisonous sumac, 6 of greenbrier, 4 of juniper, and 1 of hackberry. Mr. W. L. McAtee, of the Biological Survey, has informed the writer that at the roost formerly located at Woodridge, near Langdon, D. C., he recorded the following species of plants in such abundance as to justify the belief that they had sprouted from seeds brought there by crows: Poison ivy, poison sumac, flowering dogwood, sour gum, arrowwood, and frost grape. He also stated that in 1 square yard there were 51 plants of poison ivy. In fact, wherever a crow roost has been established for a period of years a substantial growth of one or more of their characteristic food plants is bound to result, provided, of course, such other factors as soil, moisture, exposure, etc., are favorable.

That this is only a portion of such material scattered by these birds there can be little doubt. Ranging as they do for many miles from their roosts during the day, the ejecting by crows of seeds of poisonous plants at widely scattered places is a more serious problem than is that presented at the roosts, where the growth of the plants is confined to a limited area. At the same time the conditions about the roosts are very often unfavorable to the growth of such seeds, as would be the case in the dense stands of pine so frequently chosen, while the seeds dropped at various feeding places during the day have a much better chance to sprout.

Although it must be admitted that any agency aiding in the reproduction of poisonous plants should not receive encouragement, it will be well before passing judgment on the crow to notice other factors working toward the same end. The records of bird stomachs examined by the Biological Survey show that no less than 65 species of birds feed on poisonous species of ivy and sumac. Many of these, considered among our most beneficial birds, possess the same objectionable habit of disgorging noxious seeds of which the crow has been accused. In several cases also the percentage of such food eaten by these birds exceeds that of the crow. To attempt to restrict the spread of poison ivy and poison oak by a war of extermination upon the crow would be akin to an effort to check the chestnut-blight disease by exterminating all bird life. In each case there are many other agencies producing the same results, so that the elimination of one only would have no appreciable effect. At the same time it may be mentioned that poison ivy readily reproduces itself through its roots and often spreads over considerable areas in spite of vigorous efforts to exterminate it

## CONCLUSION.

Ornithologically, aside from all economic consideration of good or harm arising from the gathering of immense numbers of crows, a winter crow roost must be regarded as one of the most wonderful of bird phenomena still existing in close proximity to large cities. In many instances the lines of flight pass daily over metropolitan districts during the winter months, yet only an extremely small proportion of the populace realizes their significance. In the immediate vicinity of the roosts the gathered thousands seldom fail to incite the latent instincts, so frequently present behind the shotgun, to kill for the mere sake of killing, regardless of whether the birds may be doing good or harm. The easy pot shot at hundreds of closely perched birds is a chance that few gunners seem able to resist. But the fact that these birds have maintained this interesting habit even in the face of constant persecution over a period of many years bids fair to insure its continuance as long as crows remain abundant.

Economically the roosting habit is of considerable importance, inasmuch as it results in the gathering of thousands of individuals of a species possessing some harmful traits. Fortunately the clans do not assemble for the purpose of feeding; but even as it is, large numbers of crows ofttimes forage together on comparatively small areas in the vicinity of roosts. Harm is then almost sure to be done to crops which may still be in the field. Under such circumstances vigorous and concerted action by all farmers in the vicinity appears to be the only recourse. A roost attacked for several successive nights by a number of gunners is almost certain to be deserted, and the occupants will move on. As an agency working toward the extensive distribution of noxious seeds the crow roost itself can not be regarded in the serious light in which some writers have portrayed it. Much greater harm would result if the multitudes of crows passed the night individually or in small flocks at various scattered places, as do so many other birds which feed extensively on the same seeds. All things considered, the habits of our crows during the colder months are largely neutral except in localities where in late autumn such crops as corn and sorghum may be subject to attack. The crow offsets these losses to a large extent, however, by its consumption of grasshoppers.

# HOW ENGINEERING MAY HELP FARM LIFE.

By E. B. McCormick, *Chief, Division of Rural Engineering, Office of Public Roads and Rural Engineering.*

## INTRODUCTORY.

FARMING operations in the United States are being gradually put, either consciously or unconsciously, on a basis similar to that existing among manufacturing organizations.

In the day of "dollar land" and virgin soil the investment represented was so small that a farmer was securing a reasonable return on his capital and labor if he made no more than a comfortable living for himself and family. The richness of the soil, however, made it very probable that a return considerably in excess of this figure would be secured, even without the use of improved methods and equipment. But the present price of land is such that to secure a return on the capital value it is necessary not only to obtain and maintain the maximum output but to do so at a minimum cost. This problem, expressed in terms of the factory manager, is—

> to increase the quantity of production without decreasing quality, to reduce the shop cost per unit of product to the minimum, and to decrease the overhead to the lowest possible amount that will admit of efficiency of operation.

The production may be increased in quantity in one of several ways: First, by increasing the force of workmen and the working hours per day; second, by improved machinery and equipment; third, by rearrangement of plant to permit ease and rapidity of operation; fourth, by improving the working conditions to such an extent that a greater production per workman per day will be secured. Shop cost in most cases can be reduced only by securing an increased output per workman per day. In order to secure this result, it may and probably will be necessary to install some improved machinery and to better the working conditions. The overhead charges can be reduced only by a careful and accurate, though not necessarily intricate, system of cost accounting that will detect unnecessary and unprofitable operations, equipment, superintendence, and investments.

The first-mentioned method of increasing production—that of increasing the force employed and the working hours per day—was the one formerly in vogue in manufacturing plants. In most industries, happily, it is now relegated to the scrap heap, and revived only for occasional use when there is an unexpected temporary demand for increased production which can not be met in sufficient time by one of the other methods, and which is so temporary in its nature that it is unprofitable to make the necessary rearrangements to put one of the other methods in force.

As in the case of the manufacturer, so with the farmer, it is the other three methods of increasing production which are most vital, and it is here that the engineer can be of material assistance to the farmer. The economical and comprehensive use of machinery of various types; the arrangement and grouping of farm buildings and structures, as well as the construction of individual buildings; the development of natural resources for furnishing power, as a substitute for manual and animal labor now employed at considerable inconvenience and excessive overhead cost; these are among the various lines of activity in which the specialized knowledge and experience of the engineer may be highly useful in connection with farming operations. It must be clearly understood that this character of assistance does not in any way duplicate or antagonize regular farming operations, such as the character of crops to be grown, the method of tillage to be employed, and the fertilizer to be used, which lie within the province of the trained farmer or agricultural specialist.

Aside from the material phases of this engineering service, a consideration of first importance is that the engineer can be helpful in securing for the farmer those conveniences and comforts of home life which are now possessed by the city dweller.

## MACHINERY.

Leaving out of consideration the business of truck farming and other special branches, it is necessary for the average farmer to till a considerable acreage if he is to secure more than a bare livelihood for himself and family. This can not be done profitably without the use of the requisite amount of suitable machinery. What will be the amount and character of machinery required will, of course, vary with the conditions. The readiness with which the farmer has grasped the possibilities of increased returns by extending his acreage and employing necessary machinery has led to the development in the United States of a manufacturing industry that is one of the largest in the country. Much of the product turned out by this industry is remarkable both for its effectiveness and its low cost to the consumer. As in any other industry, however, there is a certain percentage of the product that is of an inferior quality, built to sell rather than to use, and although it may in some cases be sold at a lower price than the well-built apparatus, it is, because of its inferiority, exorbitant in cost. Furthermore, a particular type of machinery may prove admirably adapted for certain operations in a given locality, but may not prove the most desirable for use under different conditions. While the types may be approximately the same, there may be certain radical differences in design or construction which render one machine better for certain conditions than others. To cull out the inferior machines and to perform the more difficult task of selecting from among the good ones those best adapted for any given purposes, requires a knowledge of machinery and engineering greater than that usually acquired without special training.

A concrete example of the decision a farmer is called upon to make in selecting machinery is shown when one considers the methods of rating horsepowers. The horsepower of a steam engine is stated in terms of the average steam pressure in the cylinder, the number of revolutions of the engine, the length of the stroke, and the piston area, the result being expressed as "indicated horsepower." This method of rating does not take into consideration the losses that occur between the cylinder and the belt wheel, and consequently a 10-horsepower steam engine will not deliver 10 horsepower to the belt wheel when running under normal conditions of steam pressure and speed. On the other hand, the gas engine is rated ordinarily in terms of the brake horsepower, which is the horsepower delivered to the belt. Owing to the fact, however, that a gas engine has one definite speed and definite horsepower at which it is most economical and which it can not exceed to any appreciable extent, it has been the policy of some gas-engine manufacturers to underrate the horsepower of the engine, thus leaving a margin of safety for overloading; other manufacturers of gas engines rate the horsepower at exactly what the brake test shows; and still others overrate the horsepower of the engine. It is therefore very difficult to select an engine of the desired capacity from the ratings of the manufacturers. Another point that enters in to add to the confusion is the fact that a steam engine responds very readily to overload conditions and may be called upon to perform as high as 50 per cent in excess of its rated capacity, while the gas engine does not possess this elasticity and can not be relied upon to perform work in excess of its normal horsepower.

When it comes to the selection of an engine to operate certain machines, or the selection of a machine of suitable size for an engine already in operation, the confusion becomes still greater, as there is even less uniformity in the method of rating horsepower required to operate such machines as feed grinders, ensilage cutters, pumps, etc. The figures published are likely to be those obtained either by estimation, calculation, or shop test, the latter method, of course, being more accurate; but even that does not take into consideration the conditions the machine will meet in the field. Other factors that the engineer will take into consideration in proportioning outfits are those of the probable losses occurring between the engine and the machine operated, such as belt slip, lack of alignment, etc., and the likelihood of the engine being called upon to perform for a short period work considerably in excess of that normally required of it.

Agricultural machinery has necessarily been developed from two standpoints: First, that of the farmer, to keep the cost down; second, that of the reputable manufacturer, to turn out the most efficient machine possible. These viewpoints are to a certain extent antagonistic; they should be reconciled with the one view of producing the most efficient machine possible at the lowest consistent price. The reasonableness of the price should be gauged, not by the first cost, but by the return on the investment, which perforce includes the amount of time during which the machinery lies idle. In establishing and maintaining such a standard the engineer can be of inestimable value through his work as a mediator between the farmer and the manufacturer. Certain standards may be established for output of the different machines, and the established price for such machines will then be that at which the manufacturer best equipped to make them can turn out the necessary number to meet the demand. Unless his price can be met by the other manufacturers they must either go out of business or rely for their trade on the uninformed farmer who by the purchase of these high-priced machines immediately becomes handicapped in his competition with his neighbors.

## ARRANGEMENT OF FARM PLANT.

The modern manufacturing plant is so located, arranged, and constructed that the particular product it manufactures progresses from the raw material on through the different operations in a regular order. There is no doubling back upon itself during its progress, and every effort is made to secure convenience and rapidity in the process. No two plants, however, will be exactly alike, even though manufacturing the same product, because the factors of site, switching facilities, locality, nature of labor available, and source of power all enter in to modify the general design. It is possible in the case of every farmer so to locate the fields, roads, barns, sheds, houses, etc., that the operations on that farm will be performed with the maximum efficiency and with the least loss of motion. The differences in arrangement and layout between two farms turning out approximately the same product are likely to vary even more than in the case of two factories because of the wider probable range in natural conditions. This means that even greater study must be put on the plant arrangement of the farm than of the factory if maximum efficiency is to result. Admirable arrangements have been and may be made by men who, though not trained in engineering, possess naturally the qualifications of competent factory managers. Yet in general it is probable that far more efficient layouts will be made if supervised by men trained in factory engineering, who at the same time have learned the local conditions and the operations to be performed in each and every case, just as they would learn those conditions and processes in the case of any factory under their supervision.

The architectural engineer can bring to the aid of the farmer in the construction of farm buildings and structures the technical knowledge that will secure maximum space at minimum cost, combined with a result at once convenient and of pleasing appearance. This latter factor is one that is often overlooked, yet, in the opinion of the writer, is a very important one.

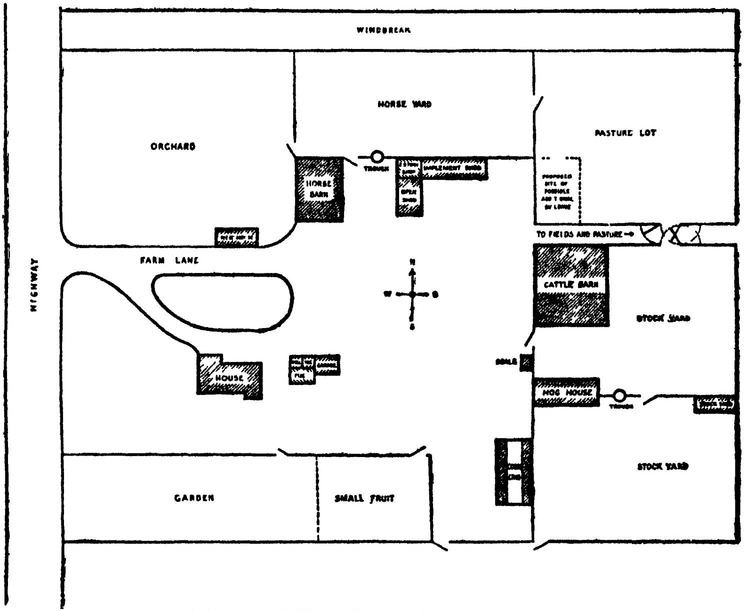

FIG. 2.—Layout of farm buildings designed to meet certain operations and conditions on a particular farm.

Figure 2 shows an actual layout of farm buildings designed to meet certain definite operations and conditions on a particular farm. An analysis of this plan shows the location of a house easily accessible to the main highway. The house being on the east side of a north-and-south highway, the interior arrangement is so planned that the disadvantage of a western exposure is overcome and the effect of a southern exposure is secured. This house is well separated from other farm buildings, but commands a view of all of them and is not so far away as to render the passing back and forth unnecessarily arduous.

A few of the points that are brought out by an inspection of this plan in connection with the arrangement of the farm buildings and the fields are:

(1) Vehicles and implements coming from the road go direct to the sheds without passing close to the house or other buildings, except the horse barn. In coming from the fields they may be taken direct to the sheds, and, without any doubling back, the horses pass into the stables or into the horse lot.

(2) The horse barn is equally accessible from the implement yard, the farm lane, or the horse lot.

(3) The shop is so located that the operations of horseshoeing or vehicle and implement repairing may be carried on either in the shop or immediately adjacent to it, without the necessity of bringing the work any appreciable distance or of requiring much traveling back and forth.

(4) The location of the farm office immediately over the shop gains all the advantages of a lookout tower, from the windows of which the owner or manager may command a view of practically the entire farm. It has the further advantage that on rainy days when he is most likely to be carrying on office work the other employees of the farm are probably engaged in work in or near the shop, and, therefore, come directly under his supervision.

(5) The location of the cattle barn, which is designed for feeding purposes only, is such that it is readily accessible from the farm lane, the feed lot, or the fields.

(6) The corn crib is so located that it serves as a portion of the fence for the hog lot, and requires the minimum handling of corn from the crib to the lot.

(7) The vegetable and flower gardens may be reached handily from the house, and yet are entirely distinct from other farm activities and well removed from the poultry house.

(8) That provision in this plan has been made for future growth is shown by the fact that a site has been set aside that will give a convenient location for additional buildings to house any of the activities of the farm.

(9) The buildings most necessary of access from the kitchen are located close to it in convenient order and connected by a protected passage. At the same time they may readily be reached from the other parts of the farm.

## THE DEVELOPMENT OF POWER.

There are to-day on many farms streams that are capable of furnishing sufficient power for many of the operations of wood sawing, feed grinding, churning, washing, separation of milk, etc., as well as providing sufficient current to operate a number of lights and a few small appliances such as flatirons, motors for sewing machines, vacuum cleaners, ice-cream freezers, etc. On the other hand, as evidenced by the inquiries coming into the Office of Public Roads and Rural Engineering, there has been an attempt in many cases to make use of or develop the power of streams which are of insufficient capacity. In the aggregate, considerable sums have been spent in an attempt to develop these insufficient supplies. The problem of the development of these powers and the question as to whether a particular source of power is sufficient to warrant development is one that can be settled by the engineer only.

The arrangement of the farmhouses should provide for the greatest utility and at the same time include many of the comforts and conveniences in the way of light, ventilation, heating, and equipment for expediting cooking and housekeeping operations and reducing the drudgery thereof. This problem can best be solved by the architect who to his technical training has added a knowledge of the conditions to be met.

## WATER SUPPLY AND SANITATION.

We are accustomed to think of the cool, shaded open well and the sparkling spring in some ravine as being the sources of drinking water that is far superior to any available to the city dweller. As a matter of fact the well curb may be lower than the surrounding ground, and the well may for years have been acting as a collector of germs of all kinds until even the bucket itself is lined with them. The spring may be and many times is merely the outlet of a drain from some field badly contaminated by sewage or other refuse, and the water from the spring may be loaded with germs, such as typhoid. A person drinking such water may, if the fortunate possessor of a strong constitution and under favorable conditions, maintain these germs within his system without fatal or even serious effects. It is a fact, however, that the per capita prevalence of typhoid and similar diseases is greater in suburban and rural communities than in the crowded cities, in spite of the slums existing in many of the latter. So well established is this fact that it is now not unusual to hear the expression "vacation typhoid," when speaking of a case existing in the fall or winter that is reasonably traceable to conditions existing in the locality where the patient spent his vacation.

In most localities in the United States it is easily possible to secure a reasonably copious supply of pure water, but the methods employed in one locality may not do in another. The constructions to be employed in securing the supply and protecting it after it is secured are in the main simple if adapted to the conditions. In many cases, through lack of sufficient forethought or knowledge on the subject, the source of water supply is located at the most inconvenient point on the farm, because of the belief that water can be obtained more readily there than at any other point. In many cases such location is absolutely unnecessary. The engineer's knowledge may permit him to study the local information available on the subject of ground waters and locate the supply at a point which makes it most convenient to all operations of the farm.

In two typical cases now being worked out by the Office of Public Roads and Rural Engineering in adjacent localities, the conditions warrant in one case the use of a ram operated by the flow from an artesian well; in the other it has been decided that a gasoline engine and a deep-well pump will prove to be the best solution. In the one case an underground pressure tank can be used, located near the source of water supply, and furnishing water under pressure to all the buildings and feed lots; in the other case it has been about decided to use a combined system consisting of a pressure tank in the basement of the dwelling and a small storage tank located in one of the barns and supplying two or three buildings and feed lots. The points that have been considered in determining the type of installation to be employed are the operations carried on, the contour of the ground, the location of the water supply, the location of the present buildings, which was already fixed, and the probable location of additional buildings to be erected as needs arise, not neglecting, of course, the amount of money that could reasonably be spent on the installation without raising the permanent investment beyond a point where returns might be expected.

The engineer may not stop when he has located the source of supply and arranged to protect it from contamination; his next step is to arrange for the distribution of the water to the farmhouse and the other buildings of the plant. With a knowledge of plumbing appliances and methods possessed by a competent sanitary engineer, the water supply can be carried into the house and to various parts about the farm at a comparatively low cost. With the system correctly installed, the first cost may be saved many times over in the operation of the entire plant through reduced labor and the consequent increased time for other work, to say nothing of the added convenience and pleasure to be derived from such an installation.

Closely connected with the problem of water supply is that of sewage disposal. Formerly it was considered that but one of two methods was available for the disposal of human excreta—that of a community sewer or open privy vaults. To-day there are in use several methods lying between these two.

A vault may be used and rendered to a great extent sanitary. Cesspools under certain conditions may be advisable. A septic tank with some one of several forms of distribution and aeration may be found to fit the needs and be within reasonable limits of expenditure.

Even more than some of the other problems of rural engineering, that of sewage disposal is one whose solution is determined to a great extent by the local conditions. An installation that has proven satisfactory in some cases has turned out to be a complete or partial failure when applied under other circumstances. In order so to design and locate a disposal plant that contamination is avoided, not only on the premises of the owner but on those of his neighbors, requires the services of a man who not only has the necessary scientific training, but who can draw from his own experience and from that of others.

## FUNDAMENTAL CONSIDERATIONS.

In figuring on the installation of what might be called the producing plant of the farm, which includes barns, stables, sheds, shops, fields, etc., the element of return on investment must be considered. While in the design of such a plant there should be an effort made to secure pleasing effects, this is not the essential feature, the factor of utility being predominant. To build a barn unduly expensive or larger than is likely to be needed within a reasonable length of time is poor business management. In the design and construction of the farmhouse, however, the question of utility alone should not be the determining factor. The first thought should be the making of a home. The amount of money to be invested in the building of the home should not be determined by its relation in size to the balance of the plant, nor by the amount that is necessary merely to provide a shelter, but the amount to be invested should be that which the owner may reasonably afford without financially crippling himself too severely. The average city dweller in buying a house for a home does not proceed solely on the basis of what he can expect to secure in case it is ever desirable to place the house on the market. He is not likely to consider the purchase of a home as a financial investment, but as a social one, which will enable him to secure for his family the comforts and conveniences that he could not secure in a rented house, and to have for his family a genuine home, a genuine home life. If he is able when the time arrives to dispose of his property to financial advantage, well and good; if not, he considers, and properly so, that he has made a good investment from the social side.

There is no panacea that will cure the yearning for city life evidenced by the country boys and girls of to-day, but there are certain conditions which if established will add materially to the attractiveness of life in the country, and should therefore prevent them from flocking to the cities merely to avoid life on the farm. It is not to be expected that every person raised on a farm will desire to follow farming as a life work, nor is it necessarily desirable that they should do so. Many of the boys will feel a calling to one or another of the professions, and it is probable that if allowed to follow their bent they will be far more successful and contented than if overpersuaded to stay with the farm. The problem is not to force the boy or girl to remain on the farm, but to assist them in every way in making an intelligent choice. Their choice can not possibly be intelligent unless they are familiar with farm life under its best conditions. The architect and the engineer can assist in bringing about these conditions much more rapidly and effectively than could possibly be done by persons untrained in these professions, however enthusiastically they might work for the desired ends.

It is true that in some cases engineers have failed to produce the desired results in connection with farm operations. This failure may readily be traced to the fact that the attempt was made by engineers who had not become thoroughly acquainted with the conditions and necessities of the field in which they were working. The same failures have been obtained by others as well as engineers when working in any unknown field. In the past it was difficult in many cases to secure an engineer who, in addition to his technical training, was possessed of the necessary knowledge of farm conditions to enable him to apply engineering principles thereto. At the present time, however, the demand for men of this kind is being met in part by young men who are being turned out from land-grant colleges, trained either in agricultural engineering courses or in mechanical, civil, or electrical engineering courses in which the application of engineering principles to farm life has been emphasized. This supply of available engineers will undoubtedly increase for several years to come, and these men will most certainly leave an impress on the farming life of this country which will tend to raise the standards of living as well as the standards of production to an even higher extent than they now are.

# SOME OUTSTANDING FACTORS IN PROFITABLE FARMING.

By J. S. Cates,

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THE principles which underlie profitable farming are not unlike those which underlie the profitable conduct of any business. The difference is merely in the application. The one fundamental principle underlying all successful business undertakings is that the cost must be less than the selling price. In the operation of this principle, agriculture is no exception. Farming, however, is such a complex business, and the different enterprises making up the farm unit are so intricately related, that it is often well-nigh impossible to determine the true cost or the true selling price of a farm product. However, the relation of any factor in farming to the profits of the farm as a whole, by the study of a large group of farms, can be fairly accurately determined. This relation of the individual enterprise to the profits of the whole is perhaps the best guide to successful farming and to an understanding of the principles upon which good farm organization is based.

One of the first and most important factors having to do with profitable farming, as in all other lines of business, is the size of the enterprise. There are several measures of size of a farming enterprise. Perhaps in operations of the same general type, the area of the farm furnishes the most significant measure of size. Of course, size in acres can not be used in comparing a truck farm or a farm of any intensive type with a general farm. Despite the much-talked-of idea of "a little farm well tilled," actual records from thousands of farms covering pretty well the whole United States go to show that little farms do not often make big profits, and that as a rule the profits from farming vary directly with the size of the business. It might, however, be pointed out in this connection that the opportunities for loss vary also in the same way.

In a study of the agriculture of Chester County, Pa., 115 farms of the group of 60 acres and under, averaging 40 acres, only 8 per cent made labor incomes[1] of $1,000 or more, and the average for the group of this size was $404. Of the group ranging in size from 161 to 393 acres, averaging 203 acres, 68 per cent made $1,000 or more, the average for the whole group being $1,575.

In a similar study made in the extensive farm region of the upper Mississippi Valley States, the 160-acre farm groups gave an income over five times that of the 40-acre group. Results closely paralleling these are secured wherever such studies are made of comparable types of farming. It is not surprising that this is true when we consider some of the handicaps under which the small farm is operated. For instance, in the group of large general farms in the Chester County area, the value of machinery equipment per acre of crops was only about one-half that of the small-farm group and the crop acres per horse was nearly double, as was also the crop acres per man. Furthermore, a small farm is rarely adequately supplied with equipment to enable the farmer to properly do his work.

A recent study of machinery equipment on over 1,100 farms in western New York showed that when, for instance, a sulky plow was used to cover 15 acres annually the cost per day of use for the machine alone was 83 cents. When this same plow was used to cover 55 acres annually the cost was reduced to 57 cents per day. A grain drill when used to cover 20 acres annually cost per day used, $2.97; when used to cover 117 acres annually the cost per day dropped to $1.04. A grain binder, when used to cover 15 acres per year, cost per day used the surprising sum of $8.15; when used to cover 85 acres per year the cost per day used was $2.41.

Another striking disadvantage of a small farm is that the restricted acreage does not permit of a sufficient diversification in the farm enterprises to furnish a good, even, all-the-year-round employment of labor. As a result, the labor employed by the year is often idle for long periods. Whether this labor be hired, or be the services of the farmer himself and his family, the results are the same. Rather than be idle for a long period, this labor might well be employed in some industry which yields even but slight profit. In the larger size farms this factor can easily be provided for. The minimum size of a farm for efficiency should be such as will furnish opportunity for adequate employment for labor, machinery, equipment, and work stock.

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[1] Labor income: Roughly speaking, what a farmer earns over what the money he has tied up in his farm would earn for him if put out at interest. Labor income is found by subtracting a fair rate of interest on investment from the total annual farm income, which includes all receipts except those items which the farm contributes directly to the family living.

It is not always possible for a farmer to enlarge his business by investing more capital until it shall have reached the optimum size. He can, however, quite often rent additional land. In many parts of the United States the figure paid for land rental, either in cash or in part of the crops, amounts to considerably less than a normal interest charge. A study of three groups of tenant farms located in Indiana, Illinois, and Iowa, showed that the tenants paid on the average a rental equivalent to only 3.5 per cent of the value of the farm. A farmer with restricted means, therefore, under such circumstances need not worry about his inability to purchase when he can rent more cheaply than he can own.

The diversity of enterprises making up the farm unit shows an important relation to profit. The successful farm usually has from three to five important sources of income. There are some extraordinary circumstances under which a farmer may find it more profitable to raise only a single crop, and even to buy feed to supply his live stock, than to engage in diversified farming. These conditions are exceptional, however, and such a farm is always subject to disaster through the failure of that single crop, as well as through failure of market conditions. And, further, no single cropping system offers an opportunity for continuous employment throughout the year, while with a diversified agriculture the leaks caused by idle seasons can be largely overcome.

Live stock on the farm usually helps greatly in furnishing continuous employment. Live stock is primarily a method the farmer employs of marketing his produce, and the livestock yield must be equivalent to the market price of the feed or a loss is occasioned; but if live stock yields even a small margin over current prices of feed, yet the labor employed in caring for the stock would be otherwise idle, then the industry becomes highly desirable and contributes to the profit of the farm.

The factor of profitable farming which has probably heretofore received more attention than any other has been what might be termed efficiency, that is, the crop yield and production per animal. As a rule, crop yields for a community are considerably below what would be the most profitable, and production per animal is decidedly below what has been shown to be the most profitable. In the case of crop yields, however, investigations have shown that the biggest yield is not, by any means, always the most profitable yield. As a rule, the most profitable yield of crops for a community ranges from 15 to 30 per cent above the average of the good farmers of that community. If the yield rises much above this figure, the profits of the farmer's business are usually found to decrease. It is possible to suffer from too big crop yields. Quite a few American farmers have reached this point. The optimum yield for greatest profit, of course, varies widely with different soils and economic conditions.

Studies of one large group of Pennsylvania farms showed, when the yield of crops reached a point about 35 per cent above the average for the region, that there was a sharp decrease in profits. The price of products as related to the relative costs of yields of different magnitudes seems to be the governing factor in determining the most profitable yield. Survey studies indicate that very few farmers are producing as large crop yields as existing economic conditions warrant. Farm practice, in the aggregate, always responds to changed prices of commodities, but this response by the individual farmer, in the majority of cases, is made far more slowly than the greatest profit would indicate.

To illustrate how the yield is determined by prevailing price of a product, the case of corn in North Carolina may be cited. In the decade previous to the last, the average price per bushel of corn in that State was about 55 cents. The yield per acre was around 13 bushels. During the past decade the price has ranged around 85 cents a bushel, and the yield has increased to about 20 bushels per acre. The explanation of this probably lies in the fact that under the higher prevailing price it became profitable to use more fertilizer and legumes and give better tillage to the crop than under the low scale of prices. No doubt the average yield is yet far below what would be the most profitable under existing conditions.

Survey studies have never disclosed, however, a group of farms on which the yield per cow had reached a point above which profit decreased. There does seem to be a point in yield per cow above which increased yield is not accompanied by much further economy of feed. Recent studies of feed cost as related to milk yield, made on four farms located respectively in Michigan, Wisconsin, Pennsylvania, and North Carolina, running for five years and involving careful, complete yearly records of 443 cow-years, indicate that this point is reached at a yield of between 6,000 and 7,000 pounds of milk.

*Relation of yield and feed cost, per cow, to feed cost per 100 pounds of milk produced.*[1]

| Pounds of milk | Number of cows. | Average annual yield (pounds). | Feed cost. | |
|---|---|---|---|---|
| | | | Per cow, yearly. | Per 100 pounds milk. |
| 3,000 and under | 16 | 2,349 | $43.93 | $1.87 |
| 3,001 to 4,000 | 33 | 3,648 | 49.47 | 1.36 |
| 4,001 to 5,000 | 78 | 4,596 | 55.00 | 1.20 |
| 5,001 to 6,000 | 111 | 5,450 | 59.91 | 1.10 |
| 6,001 to 7,000 | 109 | 6,445 | 62.85 | .98 |
| 7,001 to 8,000 | 60 | 7,514 | 70.38 | .94 |
| 8,001 and over | 36 | 9,049 | 80.45 | .89 |

The accompanying table and graph (fig. 3), both based on these records, show that the cost of feed per 100 pounds of milk decreases rapidly up until about 6,000 pounds yield, after which the decline in cost is very slight. The lesson from this study is that it is of much greater importance to increase the milk yield up to between 6,000 and 7,000 pounds than it is to attempt to get the yield above this figure, as far as the economy of the use of feed is concerned. It is easier to increase the quantity of milk when it is low than when it is high. It is also easier to raise low crop yields than it is to raise already high ones. Furthermore, in both cases raising a low yield is the most profitable thing to do. In dairying, a high standard of production per cow is usually the keynote of success. According to the recent Pennsylvania study of 289 dairy farms, 48 of these farms showed a yield per cow of less than $50. The labor income of these farms was 45 per cent below the general average. Twenty-eight farmers of the group had incomes per cow of more than $120, and their labor income was 75 per cent above the average.

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[1] From records covering five years made on four farms located respectively in Michigan, Wisconsin, Pennsylvania, and North Carolina.

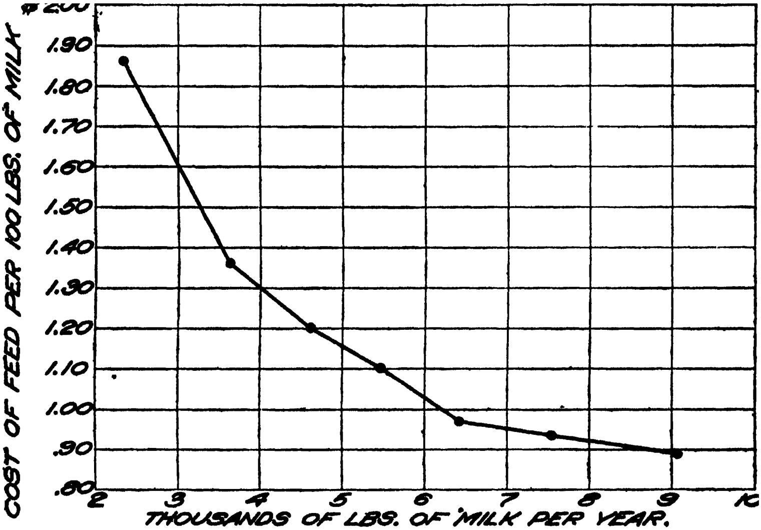


FIG. 3.—Relation of yield per cow to feed cost of milk. (Chart based on data in table on p. 117.)

Perhaps the most conspicuous cause of success in farming is prompt and fitting change in type of farming in response to economic pressure, as indicated by the market price of products as related to cost. The American farmers who are most successful usually sense the operation of economic forces long ahead of their neighbors. A large number of farmers change an old-established system only when forced by dire necessity. Not only is there the greatest opportunity to any individual farmer through quickly modifying his organization in response to changed markets, but such readjustment is of great value to the whole community, for such action in time becomes corrective of the changed condition from which it sprang. Let us assume, for instance, that there is a community engaged largely in live-stock production, and that through some cause feed prices advance to such a point that there is more money in selling the raw product than in feeding. Under such conditions a large number of farseeing farmers will quickly curtail their live-stock industry and become sellers of raw feed products. This, in turn, has a tendency to reduce feed prices and to increase the price of live-stock products, thus bringing about the old balance.

The farming business which is of efficient size, and which is made up of diverse units, put together in such a way as to operate smoothly and well, with full employment of both labor and horse and machinery equipment, provided supervision is adequate and the enterprises making up the farm are selected wisely and are efficient, complies closely with the outstanding factors of profit.

The ideas concerning successful farming presented in the preceding pages can not be put into practice without capital. A vast number of American farmers are making their homes on impoverished land and are practically without working capital. The outstanding factors in profitable farming, in such cases, consist in a study of what to do with what they already have. The factors of profit must be toned down to terms of expediency under existing conditions.

It is vastly important, from a national welfare standpoint, to point out means whereby the now well-to-do farmer can increase his earnings. It is absolutely essential to good citizenship, however, that the man without capital, living on an impoverished farm, be shown the way to make a reasonable competence sufficient to provide for the education of his children. The only opportunity for the farmer located on poor land, having no capital, is to substitute his time and labor for capital. His first problem is to develop soil fertility. The only known, broadly applicable method of making poor land rich without extensive capital is through legumes and sod crops. Many farmers are not able to buy legume seed. In practically all regions, however, some class of legume seed can be home grown, and from the very small quantity required to seed say 1 acre, the poor-land farmer can, in a short time, be producing enough seed to supply his whole needs. He can, in many cases, with great profit have a surplus for sale.

In the Southern States, vetch, crimson clover, cowpeas, and soy beans all seed heavily. In the more northern States all of these crops, with the exception of crimson clover, do well. The question of growing legume seed at home for sale and for planting to improve the soil is the big outstanding opportunity for the poor man on poor land to develop a profitable farming system, and this opportunity can not be too strongly emphasized.

# POINTERS ON MARKETING WOODLOT PRODUCTS.

By Stanley L. Wolfe, *Forest Examiner, Forest Service.*

## MAXIMUM WOODLOT RETURNS.

THE question of securing the greatest cash returns from the woodlot is one of finding the market in which the demand for each kind of woodlot product is greatest and the price highest. The best available market is not necessarily the first that presents itself. A farmer, for example, might sell his timber to a local sawmill for $10 a thousand board feet in the log delivered, unaware that in a near-by city there is a veneer mill which will give him $24 a thousand feet for the same material. Or again, in the same woodlot there may be some fine hickory trees. From the sawmill man the owner could get for these only the same price as for the other timber, because hickory, as lumber, is not especially valuable. But if there was a handle factory within shipping distance, he could probably sell his hickory there for between $20 and $30 a thousand. Or still again, there might be some black walnut trees for which a firearms manufacturer would pay a very high price, enough appreciably to raise the profit on the whole transaction. Thus a study of the material available will often lead to greater profits. (Pl. IV, fig. 1.)

## WHAT DOES THE WOODLOT CONTAIN?

The woodlot owner usually knows what kind of trees he has, but he is seldom able to tell offhand how many of each kind there are, or how many cords or thousand board feet of material can be got out of them. Yet in trying to make a sale, the first question he is apt to be asked is, "How much have you?" Unless he has gone over the tract, or had it gone over, he is naturally at a loss for definite figures. He may have gone over it superficially, and will answer so many trees, or perhaps so many of each kind. The manufacturer will then most likely say, "We buy our material measured in cords or thousand board feet. How many cords or thousand board feet have you?" This time, of course, the owner will be entirely at a loss for an answer, and the chance for a good sale may slip by.

Another thing the owner should know at the start is for what purpose his timber is best suited. If it is all of one size it may be good for only a single product, such as railroad ties. On the other hand, if there are large trees and small trees and medium-size trees, there will be possibly the most money in selling each size of tree for a different product, the particular one for which it is best adapted. White oak will serve as an example. Sound white oak trees under 12 inches in diameter should make railroad ties; those from 12 to 18 inches, saw logs; and those over 18 inches, veneer. (Pl. IV, fig. 2; Pl. VI.) Soundness, of course, will have to be taken into account. Defective timber is not suitable for products requiring high-grade material. "Cat faces" on the trunk near the ground, the result of fire having at some time run through the woods and burnt the bark, indicate generally that a tree is hollow or rotten inside. White oak trees over 18 inches in diameter that show cat faces will probably not yield veneer, but only lumber, and perhaps a poor grade of that.

The first thing to do, therefore, is to find out how much timber of each kind the woodlot contains, what products it will yield, and what is its general condition and quality. The owner can usually do this himself; if he can, it of course means so much money saved. In States having organized forest departments the State forester usually gives advice on such matters, and may even assign one of his assistants to estimate the timber in the woodlot, though such an assignment can not be counted upon. If the woodlot is small it will be best to measure each tree separately. Diameters should be measured at about 4½ feet above the ground with calipers made for the purpose. Heights should be carefully estimated, or measured with some sort of height instrument, to the first large limbs. The data should be recorded on a tally sheet (no particular form of sheet is required) by species, diameter, and height. When the entire woodlot has been gone over it will be possible to divide the trees into diameter classes; for example, 8 to 12 inches, 12 to 18 inches, and 18 inches and over. As a general rule, trees from 8 to 12 inches in diameter will make ties; those from 12 to 18 inches, poles or piling; and those 18 inches and over, lumber or veneer. Knowing the diameter and height, the amount of timber in board feet in each tree can be found by the use of volume tables. General volume tables are included in Farmers' Bulletin 715, "Measuring and Marketing Woodlot Products." Other tables applicable to certain individual species may be had from the Forest Service. The quantity of cordwood a tract will yield can hardly be estimated by an inexperienced person, and this is true also of such products as pulpwood, tan bark, and the like. Sales of such material will usually have to be made on the basis of actual cut.

If the woodlot is large, it will, of course, seldom be possible to measure each tree separately. The thing to do in such cases is to lay out sample plots of a quarter or half acre each, and measure every tree on each plot in the same way as when the whole tract is covered. Then, in order to get the average stand on an acre, divide the total stand on all the plots by the number of acres in the plots. Multiply this by the number of acres in the tract to get the total stand. The plots, which ought to include at least 10 per cent of the total area, should be laid out not only in the best, but also in the poorest and in the medium timber, with the aim of securing figures of stand which will be representative of the tract as a whole.

Another method is to measure every tree on parallel strips, 66 feet wide, running through the tract. Every 660 feet in length of such strips comprises an acre. Averaging all the acres comprised in the strips, and multiplying by the total acreage of the tract, gives the total stand, as in the sample plot method. Like the plots, the strips should include at least 10 per cent of the woodlot. The strip method is perhaps the better of the two, since it makes it certain that the poorest as well as the best timber will be taken into account.

Whatever the method of estimating, proper allowance must be made for defective timber. To do this accurately requires some experience, but for all practical purposes in the woodlot the following method will suffice: Dead trees, except those killed by fire or other outside agencies, are apt to be very defective, and should be culled. Fire or insect-killed timber, if it has not deteriorated, can often be utilized for the same products as live timber; this can be determined only by an examination. The utilization of blight-killed chestnut is discussed in Farmers' Bulletin 582, "Uses of Chestnut Timber Killed by the Bark Disease." Trees which are dead in the tops should be heavily culled, and those which show defects in the butt should be culled according to the extent of the damage.

When the tract is exceptionally large, it may pay to employ a professional "cruiser" to estimate the timber, provided his services can be secured at a reasonable price. If one is employed, however, it is well to remember that he has probably been accustomed to estimating timber on a large scale, in doing which it is the custom to be conservative, so that his estimate of the smaller tract is likely to give a figure somewhat less than the actual stand.

## FINDING A BUYER.

Once a woodlot owner knows the kind, amount, and quality of his timber, the next step is to find someone who will buy what he has to sell. It is easy enough, of course, to get in touch with local wood-using concerns; a personal visit will accomplish the purpose. But if the owner depends altogether upon local industries to take up his product he is likely to find his market extremely limited. Some products, such as crossties and fuel wood, have to be sold locally; it would not pay to transport them far. But other products, among them tan bark, can be shipped 150 miles, and still others, like walnut timber for gunstocks, can be shipped almost any distance. It is often advantageous, then, to procure lists of wood-using firms in his county, in his State, and even in neighboring States, as a basis for finding the best market for the different products of his woodlot. The Forest Service has compiled such lists for a number of States, and will be glad to tell applicants how they can be secured.

Railroads are the largest purchasers of crossties. Any station agent will furnish information concerning specifications and the prices paid by his company. Ties should be sold, whenever possible, to the nearest railroad, for it is usually impracticable to ship them anywhere by rail on account of the high freight rate. Electric railways in cities and towns also use ties, but unless the distance to town is short it will not pay to ship them. If such a market is available, specifications and prices can be obtained from the general offices of the company. Electric interurban lines offer the same opportunity for disposing of ties as do the steam roads.

Telegraph and telephone lines are always in the market for poles. Most of them have branch offices in towns and cities, where prices and specifications can be obtained. If not, such information can always be had from the main office of the company. Electric power and electric street-railway companies also use poles. This offers one of the best opportunities for obtaining a good profit from the woodlot, provided the timber is of the right size and quality. Pole specifications usually classify the material by 5-foot lengths, beginning at 20 feet and running up to 60 feet, with a diameter at the top end of 7 inches in the smallest poles and correspondingly larger diameters for the longer ones. Poles of other sizes are sometimes purchased, however, for special purposes.

Piling is used for the foundation of quays, wharves, retaining walls, bridges, and railroads in swampy country. The market is not very extensive, but railroads, large construction firms, and docking companies purchase considerable quantities. Piling timbers must be straight and long, and bring good prices. If there are any pile users in the vicinity, it will pay to dispose of some of the material in the woodlot for the purpose. Lists of users can be obtained from the Forest Service. Mines are large users of timber, and if the woodlot is in a mining district, it would be well to look into this market.

Sawmills, veneer mills, and fruit and vegetable package factories offer a market for the particular kinds and quality of woods they handle. These industries buy all their material in log form, an advantage to the woodlot owner in that he does not have to engage in any manufacturing operation himself; all he need do is to cut and deliver his timber in the rough at the mill (Pl. IV, fig. 2). Veneer logs must be of good quality and size, but selected stock brings a high price. If there is a veneer mill within shipping distance, the woodlot owner with logs to sell should get in touch with it. Slack cooperage, tight cooperage, paper pulp, wood distillation, tannin extract, excelsior, and handle establishments take their raw material in the form of bolts, billets, or cordwood, all measured by the stacked cord (Pls. V, VI, and VII). Such products are easily manufactured and handled, and the market is usually stable. One or more such industries are fairly certain to be located in almost every community; lists can be obtained from the Forest Service. Tanning-extract plants take the bark of chestnut oak, hemlock, white oak, and black oak, and often pay well for it. Bark is measured by the cord or ton, a cord of 160 cubic feet weighing approximately 1 ton. Furniture and chair factories pay a good price for their material, but they require squares or other special forms which must be manufactured by the woodlot owner. The Forest Service has prepared bulletins on the wood-using industries of a number of States, which tell the uses to which various woods are put and the quantity of each kind used annually for each purpose. They also contain directories of wood-using firms arranged according to the products they manufacture. A list of these bulletins and information as to how to procure them may be had upon application to the Forest Service.

Correspondence with possible buyers is a simple matter. They should be told how much and what kind of wood is for sale, and asked for information as to specifications and prices. To save himself trouble, the woodlot owner should ask for prices f. o. b. shipping point. If, in reply, the manufacturer quotes prices f. o. b. mill, the woodlot owner will have to consider the cost of shipping his material. Rates can be obtained from the railroad freight agent at the nearest station.

## WAYS OF SELLING WOODLOT PRODUCTS.

The way in which woodlot products are sold may have a good deal to do with the profit an owner gets from his tract. There are four ways of selling: (1) by scale measurement of rough products, using the different log, cord, and rick scales; (2) by the piece, for such products as ties and poles; (3) by the boundary, for a lump sum; and (4) by lumber scale of sawed products.

Selling by the log or piece is the simplest method, and the one that most farmers are probably in the best position to follow. It does not require much technical knowledge of scaling and the like, or great attention to details. Ties, poles, piling, etc., are always sold by the piece. It is a simple method; the important things to know are the different grades of each product and their relative value. Fire wood, pulp wood, and excelsior wood are sold either by the cord or rick. This, too, is a comparatively simple method of marketing, and in small timber it is better than selling log scale, on account of the way most log rules underestimate the contents of small logs. To be sure of selling profitably by the boundary for a lump sum, the wood-lot owner would need to make a very careful estimate of the amount and value of his timber. Outside of this, the method gives the seller the least trouble of any, unless the buyer should make conditions in regard to the number, kind, and size of trees to be cut, in which case a good deal of supervision on the part of the owner would be necessary. Taking everything into account, sale by scale measurement or by the piece is probably better.

So far as gross returns go, the owner could probably secure the most by disposing of his material in the form of lumber, or of squares or other special forms demanded by the secondary wood-using industries, either sawing out the products himself or having the work done by a portable mill. This would be complicated, however, by such matters as cutting specifications, inspection, seasoning of the products, and accumulation of waste. The owner would also need to know something about grading rules and milling methods. On the other hand, he need not make an accurate estimate of his standing timber, and he would perhaps be able to utilize common and cull logs which he could not haul out of the tract at a profit. The lower grades of lumber he could use on the farm or dispose of locally. Ordinarily, however, manufacturing lumber and special forms would not be as advisable as disposing of his products in the rough, unless there was a portable sawmill operating in his neighborhood. In the latter case the production of sawed material might be warranted. The milling could be done by contract, but the owner should attend to the logging himself.

He could turn out shipping lumber or else fill special orders from dealers in hickory whiffletree squares, or handle stock, oak felloe stock, tight cooperage stock, or car and bridge timbers, ash baseball bat or long handle stock, dogwood and persimmon shuttle blocks, cedar squares and posts, and locust insulator pins.

## PLAN OF UTILIZATION AND COST KEEPING.

In marketing his woodlot, the owner should have a plan to go by and an estimate of the cost of doing the work. It ought to be a simple matter to make a working plan. All that needs to be shown is how much of each product the woodlot contains, to whom each product is to be sold, the specifications to which it is to be cut, the price to be received, and the cost of cutting and marketing it. With such information systematically arranged, the owner knows just what he intends to do and what profit he ought to make. The simplest form of plan is merely a tabular statement of the data. Another and perhaps better scheme is to keep the data for each class of material on separate cards. This is compact and easily referred to.

To figure the cost of marketing is also a simple matter. If the owner does his own cutting and hauling, the cost will be merely a charge for teams and for the labor of the owner and any helpers he may employ. If a number of different products are turned out, it would be well to determine the cost of each. With lumber and other sawed stuff, milling costs will have to be added. No elaborate method of finding costs is necessary. The more simple the method, the less will be the chance of error. If the cutting and hauling are done by an outside party, the contract price will, naturally, determine the costs.

## WHEN TO CUT THE TIMBER.

Unless the products have to be peeled of bark, the best time to cut timber in the woodlot is in the winter months. This also happens to be the season when other work on the farm is slack and the woodlot owner is in the best position to get out his material. Hauling is easiest in winter wher-

FIG. 1.—A WOODLOT CONTAINING MUCH MERCHANTABLE MATERIAL.

The fallen white-ash log, if marketed, would have brought a good price.

FIG. 2.—VENEER LOGS BRING GOOD PRICES.

The best timber in the woodlot can probably be used for this purpose if there is a veneer mill within shipping distance. Veneer logs should be sound, of good quality, and at least 18 inches in diameter.

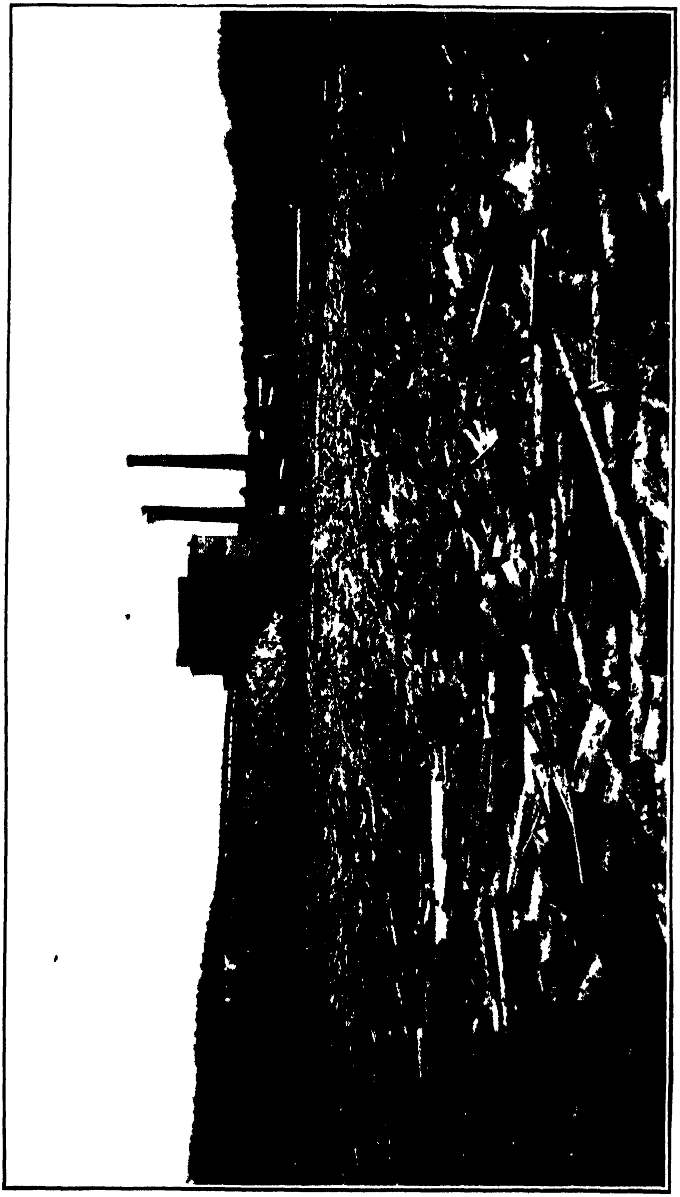
FIG 1 —STAVE BOLTS FOR SLACK COOPERAGE.

An ordinary woodlot should yield considerable of such material.

FIG 2 —WHITE OAK STAVE BOLTS FOR TIGHT COOPERAGE PILED TO ALLOW FREE CIRCULATION OF AIR.

MAKING A HEWED RAILROAD TIE.

The average woodlot will yield many of these They bring all the way from 35 to 75 cents delivered at the nearest railroad right of way.



PULPWOOD BOLTS CAN SOMETIMES BE CUT FROM THE WOODLOT.

The picture gives an idea of the size of this kind of material ever there is snow on the ground. Winter-cut timber seasons slowly and evenly, and by the time the warm weather comes is thoroughly air-dried. Round timbers, when cut in warm weather and allowed to remain in the woods, are subject to attack by insects and fungi. Products which must be peeled, such as ties, poles, and tanbark, should be cut in spring, when the bark peels most easily. Hardwoods which reproduce by sprouts must be cut in winter if the resultant coppice growth is to have the best chance to develop into a new stand. When such trees are cut in the summer or early fall, the sprouts start immediately and are not hardy enough by the time winter sets in to stand the cold. Veneer logs which must be delivered at the mill in a green condition can be cut in any season of the year, provided they are delivered as soon as cut; and the same is true of pulpwood and tannin-extract wood.

There are other points in connection with marketing woodlot products which might be touched upon, but those discussed here are the main ones. The really necessary steps are to find what the woodlot contains, and then, through the medium of a list of wood-using industries within shipping distance, to find a purchaser for the various classes of timber on the tract, delivering the material in the forms called for. If the woodlot owner will devote the same thought and care to marketing his timber as he does to marketing other farm crops, he will be more than likely to find that this necessary part of the farm, which now too often brings in no revenue at all, can be put upon a sound paying basis.

## STATE WOOD-USING INDUSTRY REPORTS.

The Forest Service has completed studies of the wood-using industries in a number of States, the results of which have been printed by the individual States or in lumber trade journals. The reports at present available are listed on page 130, and may be secured from the cooperator whose address is given. In ordering those for which there is no charge, postage should accompany the application.

| State. | Cooperator. | Address. | Price. |
|---|---|---|---|
| Alabama | Lumber Trade Journal | New Orleans, La | $0.25 |
| Arkansas | Superintendent of Documents, Government Printing Office. | Washington, D. C | .05 |
| Arkansas | Separate Directory of Wood-using Plants, Lumber Trade Journal. | New Orleans, La | |
| California | G. M. Homans, State forester | Sacramento, Cal | |
| Connecticut | W. O. Filley, State forester | New Haven, Conn | |
| Florida | W. A. McRae, commissioner of agriculture. | Tallahassee, Fla | |
| Georgia | Lumber Trade Journal | New Orleans, La | |
| Illinois | J. C. Blair, University of Illinois | Urbana, Ill | |
| Indiana | Hardwood Record | Chicago, Ill | |
| Maine | State forest commissioner | Augusta, Me | |
| Michigan | Public domain commission | Lansing, Mich | |
| Mississippi | Lumber Trade Journal | New Orleans, La | .25 |
| Missouri | St. Louis Lumberman | St. Louis, Mo | .10 |
| New Hampshire | E. A. Hirst, State forester | Concord, N. H | .25 |
| New Jersey | Alfred Gaskill, State forester | Trenton, N. J | |
| New York | State College of Forestry | Syracuse, N. Y | |
| North Carolina | M. S. Holmes, State forester | Chapel Hill, N. C | |
| Ohio | Edmund Secrest, State forester | Wooster, Ohio | |
| Pennsylvania | R. S. Conklin, commissioner of forestry | Harrisburg, Pa | |
| South Carolina | E. J. Watson, commissioner of agriculture. | Columbia, S. C | |
| Tennessee | Southern Lumberman | Nashville, Tenn | |
| Texas | Lumber Trade Journal | New Orleans, La | .25 |
| Vermont | A. F. Hawes, State forester | Burlington, Vt | |
| Virginia | G. W. Koiner, commissioner of agriculture. | Richmond, Va | |
| West Virginia | H. E. Williams, commissioner of agriculture. | Charleston, W. Va | |
| Wisconsin | F. B. Moody, State forester | Madison, Wis | |

The supplies of the wood-using reports for the following States are exhausted:

Idaho.
Iowa.
Kentucky.
Louisiana.
Maryland.
Massachusetts.
Minnesota.
Montana.
Oregon.
Washington.

# HOW HAWAII HELPS HER FARMERS TO MARKET THEIR PRODUCE.

By E. V. Wilcox, *States Relations Service.*

PRIOR to the establishment of the Territorial market under the supervision of the Hawaiian Experiment Station, the tourists who visited Honolulu had for years complained of the impossibility of securing any adequate conception of the nature and variety of tropical fruits by an inspection of the local markets, and of the absence of these fruits on the menus of Honolulu hotels. The fruits to be obtained on the Honolulu markets included California oranges and grapefruit, a poor quality of Chinese banana, poor specimens of pineapple picked so green that they had neither sweetness nor flavor, papayas which might or might not be fit to eat, occasionally an avocado composed largely of an immense seed with a thin layer of pulp around it, a few turpentine mangoes, and in the Chinese markets a considerable variety of the less common tropical fruits. The reason for the lack of any adequate supply of tropical fruits in proper condition on the Honolulu markets was found in the total absence among farmers of organization or information regarding the demands of the Honolulu market or the methods of grading and shipping the various fruits and vegetables. To this reason should be added the traditional and well-grounded suspicion that in the event of making a shipment of fruit or vegetables to Honolulu the farmer might not receive a remittance large enough to pay the freight. When one asked why Honolulu markets were not properly supplied with tropical products the farmer replied that the dealers apparently did not want such produce, or at any rate would not pay enough for it to give the farmer a profit, while the dealer replied that either the produce in question could not be profitably grown in the Territory or the farmers were not sufficiently industrious to engage in any special line of agriculture. To understand how such a situation arose it is necessary to sketch briefly some of the early events on the island.

When Capt. Cook discovered the Hawaiian Islands, in 1778, he found there about 400,000 natives, largely engaged in agriculture and fishery and in self-supporting condition. With the establishment of a sailing service between Hawaii and the mainland, after the advent of the white man, trade began to develop with the mainland in agricultural produce. The forty-niners in search of gold in California received a large part of their supplies of potatoes, wheat, beans, etc., from Hawaii by means of sailing vessels. With the mainland and with oriental countries considerable trade was also developed in sandalwood, pulu fiber, candlenut oil (the export of which at one time reached a volume of 10,000 gallons a year), and cotton, especially after the Civil War. Moreover, the whaling fleets, which for many years operated in Hawaiian waters, offered a large market to Hawaiian farmers for miscellaneous farm products.

## CHANGES IN ECONOMIC CONDITIONS SINCE THE ADVENT OF THE WHITE MAN.

The advent of the white man in Hawaii was not an unmixed blessing to the natives. It brought about important far-reaching changes in their habits of life and in their industries, but these changes were not all to their advantage, as is apparent from the diminution of the native population. At present, notwithstanding the large influx of Chinese, Japanese, Porto Ricans, Portuguese, Spanish, Filipinos, Russians, and others, brought in as laborers, and the considerable numbers of Americans and Europeans who came to establish themselves in business, the total population is only 200,000, or one-half that present in Capt. Cook's time, while more than half the foodstuffs are imported from the mainland and the Orient, and a large proportion of the natives have ceased to be farmers. These changes and the resulting present condition have been brought about largely by changes and disturbances in the marketing conditions for local products. The land was gradually taken in large areas by corporations for the production of sugar cane, and later for plantations of pineapples, sisal, rubber, etc. The transportation facilities furnished by sailing vessels, and later by steamships, were quite fully absorbed in carrying sugar from the various islands of the group to Honolulu and from Honolulu to the mainland. There is a decided advantage to the transportation companies in having a large return freight from the mainland. The building up of this business in return freight from the United States greatly checked the development of local farming enterprises by reason of the extensive business connections which the transportation companies had with local dealers. The great development of the sugar industry, therefore, operated to the discouragement of farming.

## UNSATISFACTORY CONDITIONS IN EARLY HOMESTEAD COMMUNITIES.

There have always been in Hawaii men interested in the maintenance and prosperity of a local farming population. Their efforts have from time to time brought about the establishment of homestead communities in different localities on the various islands. The underlying idea which governed the establishment of these homestead communities was not always the development of independent farming but rather the attachment of the plantation laborer to the soil by giving him a small tract of land on which to raise garden vegetables, a few fruit trees, and possibly some poultry, a cow, and a few pigs. The area of homesteads, as parceled out in the early days, was about 6 acres and was obviously inadequate for the maintenance of the family in an independent condition. As a matter of fact, few even of these small homesteads were properly farmed. The laborers recognized the fact that under existing conditions a living could not be made from such a small area. The only cultivation, therefore, which was done on the homesteads was in the nature of small garden patches, and this work was done by women and children, while the men labored on neighboring sugar plantations. In a large percentage of cases the homesteads were simply planted to cane under contract with the sugar plantations and cane was harvested by the regular labor force of the plantation.

## ESTABLISHMENT OF A TERRITORIAL MARKET UNDE THE SUPERVISION OF THE EXPERIMENT STATION.

The unsatisfactory conditions in markets for farm produce in Hawaii finally induced the Territorial legislature by joint resolution of the session of 1909 to appoint a commission on fruit growing and truck farming for the purpose of investigating the market conditions and for recommending to the legislature a method of overcoming these difficulties. The commission was at once appointed with the writer as chairman and a report was submitted in February, 1910, recommending the establishment of a Territorial market. It had been originally intended that the Territorial market should be from the beginning under the supervision of the Hawaii experiment station, maintained by this department. By a ruling of the Territorial attorney general, however, it was decided that the Territorial funds at the disposal of the station could not be used for that purpose. A temporary arrangement was therefore made whereby the Territorial department of immigration, labor, and statistics maintained a Territorial market for nearly two years. At the 1913 session of the Territorial legislature an act was passed placing funds at the disposal of the Hawaii experiment station to be used in furthering the production and marketing of miscellaneous farm products. As a result of this action of the legislature the experiment station established a Territorial marketing division under its supervision on July 1, 1913.

## WORK OF THE MARKETING DIVISION OF THE STATION.

The astonishingly low ebb to which trade in local farm produce had fallen was evidenced by the fact that for the first four months of its existence the produce received by the Territorial market did not reach a total value of $700. It required patience and careful managing to establish in the minds of local farmers any confidence in the possibility of marketing farm produce in Honolulu with a profit to the producer. Through conversation with many of the farmers it was found that they had all had practically the same experience. It was impossible for any one farmer to raise enough produce to secure the reduced rates granted by the steamship companies to 5-ton shipments. Moreover, his small farm area could not be allotted to different crops in such a manner as to bring about a steady supply. The worst feature of all from the standpoint of the small farmer was that no market information was available in any of the local newspapers. The farmer was, therefore, never able, except through sheer luck, to send a shipment to a market in which a good demand existed. In most instances the market was found to be occupied by large shipments just received from the mainland.

The list of difficulties which confronted the farmer in Hawaii was not exhausted by the lack of information concerning the market, high freight rates, competition with produce shipped in from the United States and the Orient, and the indifference of Honolulu produce dealers. Another serious difficulty was furnished by the uneven nature of the land, the prevalence of insect pests and fungus diseases, the unusual heaviness of the soil, and poor roads leading from the somewhat isolated farms to boat landings. In fact the whole field of diversified agriculture in Hawaii was, until quite recently, neglected by reason of the intense interest in the production of sugar. It was therefore obviously necessary for the Hawaii experiment station to begin at the beginning and to help as rapidly as possible to bring about conditions which are recognized as fundamental to successful farming.

The freight rates on the local interisland steamships were high for small shipments, and the charges of commission men and other middle men amounted to so much in the aggregate that little or no profit was received by the producer, even when his produce reached Honolulu at a time of unglutted market. An investigation of the egg industry, for example, showed that with eggs retailing in Honolulu at 60 cents a dozen, the farmer located at a distance of 80 miles on the island of Maui netted only 13 to 15 cents a dozen for his eggs. With the establishment of the Territorial market a decided change in betterment of marketing conditions took place. The farmers who first took advantage of the market were encouraged to increase their production, others learned of the opportunities offered by the marketing division, and within six months enough of certain kinds of produce was received at the market to maintain a steady supply for a slowly increasing number of customers who visited the market for their supplies.

Visits to the various produce dealers in Honolulu brought out quite clearly their attitude and the difficulties which they had experienced in attempting to depend upon local supplies of farm produce. A number of them had had very unsatisfactory experiences. After making an arrangement with some dairyman for the purpose of handling his butter, they were unable to deal satisfactorily with him for the reason that he could not maintain a uniform supply and sometimes could not secure transportation for his produce on the local steamships. The dealers had, therefore, come to depend upon shipments from the mainland by regular steamers, and had, of course, made arrangements with mainland dealers whereby the shipments to Honolulu were regulated so as to maintain a constant and uniform supply.

The Hawaiian farmers were therefore confronted with the fact that peanuts were imported in large quantities from China and Japan, beans from the mainland, corn from Seattle and Manchuria, oranges, grapefruit, carrots, beets, asparagus, potatoes, and various vegetables, as well as cold-storage chickens and turkeys, from California, and onions from Texas and Australia. Without any information as to the actual condition of the Honolulu market, it was practically impossible for the farmer to prevent glutting the market by making a shipment to Honolulu.

## ENCOURAGEMENT OF ORGANIZATION AMONG FARMERS.

In the management of the Territorial marketing division it was apparent at once that the fundamental difficulty to be overcome was that of the total lack of organization. Rather unusual difficulties had to be overcome in starting any system of organization among the farming population. There are a few communities composed almost exclusively of one race, for example, Hawaiian, Portuguese, and, in one or two instances, American. Most communities, however, are of mixed races, involving Japanese, Chinese, Hawaiian, Korean, Filipino, and Portuguese, as well as American. Few other races understand the Chinese or Japanese language.

Nearly all races in Hawaii speak and understand Hawaiian, many of them having better knowledge of Hawaiian than of English. The diversity of language and ideas, and, in many cases, the sheer impossibility of understanding one another readily, made the establishment of cooperative associations among these groups of farmers a slow and difficult procedure. Through the medium of pidgin English, however, the universal business language of the Orient, and by enlisting the interest of representatives of various races, quite satisfactory cooperative associations have at last been formed in the various farming communities. The simplest form is a mere voluntary organization of farmers who pool their produce and ship it in common in the name of the organization to the Territorial marketing division. Some of the more advanced associations have monthly or bimonthly meetings and have affiliated women's organizations. In some instances they sell all their produce cooperatively and buy a large part of their supplies, building materials, fertilizers, household utensils, and standard groceries cooperatively. The prevailing idea in nearly all of these cooperative associations of farmers in Hawaii has been to make a study of their immediate local markets their first problem and then to organize their farm operations in such a manner as to ship to Honolulu cooperatively and at opportune times all produce not demanded by their immediate local market. The chief reason for this arrangement is that prices on local markets in the various islands are almost invariably higher than in Honolulu.

One association on the island of Maui is composed exclusively of American farmers. Their main crop is pineapples. They were induced to take up land in this locality by contract with the local cannery, which agreed to take their pineapples on a sliding-scale system regulated by the sale price of canned pineapples. Up to that time no trouble had been experienced with such contracts. Before the first crop of pineapples in this community matured the price for fresh fruit was reduced one-half or more, and the farmers were brought face to face with a new emergency. This is merely an illustration of the fate which may befall farming communities who depend upon the sale of one product under contract to a neighboring mill or cannery. A movement was at once started to establish a cooperative cannery for handling the fruit of the community, but, in the meantime, it was necessary to attempt to save the first crop by selling the pineapples fresh to the Territorial marketing division. In another neighboring community on Maui, composed largely of Portuguese and Japanese, corn, beans, cabbage, and poultry are the main products for sale. This community buys its supplies through a business manager elected by popular vote and sells its produce cooperatively through the same manager. The association has succeeded in placing its products advantageously upon the small local markets on the island of Maui and is now making large shipments to the Territorial marketing division for sale in Honolulu or for reshipment to San Francisco.

Both of these associations are making a thorough study of the methods of sorting, grading, holding, packing, and shipping their products. The unsatisfactory condition in which much of the produce was received by the Territorial market in Honolulu showed at once that a special effort must be made to give instruction and advice in the matter of packing and shipping. Through the extension work of the experiment station, a great amount of good has been done along this line. The extension men of the experiment station have visited the various farming communities with sample packing cases and have demonstrated methods of wrapping, packing, and kinds of shipping cases which have proved to be satisfactory for Hawaiian conditions. These were matters to which, for the most part, the Hawaiian farmer had given no thought. Extension work on methods of packing and shipping is yielding large results among these farmers. Considerable experience had already been had in shipping fresh pineapples to San Francisco and farther inland, and one of the most expert packers in the Territory was employed in demonstrating the best methods of sorting and packing this fruit for long shipments. (Pl. IX.) The methods of packing and shipping butter were also carefully studied and instruction given in this matter to the butter producers in the neighborhood of Hilo. In a number of instances in which the farmers could not be made to believe through correspondence that their produce was not arriving in good condition they were induced to come to Honolulu in order to see the condition in which the produce arrived at the Territorial market.

## DISTRIBUTION OF MARKET INFORMATION.

In order to keep the farmers on the different islands informed as to the prices and demands for various kinds of produce in Honolulu, a weekly market letter is prepared, a copy being sent to every farmer who ships produce to the Territorial market, copies also being furnished to all the newspapers of the Territory. This market letter is therefore printed in all languages which are spoken in the Territory and reaches practically every farmer who has miscellaneous produce for sale.

## COLLECTION OF FARM DATA AS TO PROBABLE KINDS AND AMOUNTS OF PRODUCE.

Soon after the establishment of the marketing division an active campaign was started to secure advance notification and estimates from farmers throughout the Territory as to the kinds and amounts of produce which they were likely to have in the near future for shipment to Honolulu. A card system was devised for the use of all farmers who wish to patronize the marketing division. On these cards the farmers indicated the number of acres planted to various crops, the varieties which they had used, the expected time of maturity of the crops, and the expected amount of produce as estimated from average yields in their neighborhood. By means of other cards the marketing division is furnished, about two weeks in advance of shipment, the closest possible estimates of the amount of produce and the approximate date of shipment. Usually the exact date can be given, for the reason that from many ports there is boat connection only once a week. This system of mutual exchange of information between the marketing division and the contributing farmers makes it possible to regulate the supply of produce so as to hold the trade which is already established in Honolulu and tends to prevent the flooding of the market.

## BENEFITS OF THE WORK.

The beneficial results of the establishment of the Territorial market are obvious on every hand. The demand for local produce in Honolulu has greatly increased as a result of the fact that dealers found that through the Territorial market they could secure a uniform and constant supply for their trade. Many local products which were rarely found upon the Honolulu market are now supplied in reasonable quantities. In the place of cold-storage chickens and turkeys the market is supplied with home-grown poultry in good condition. The local supply of eggs has not yet equaled the demand. The duck industry, which had previously been almost exclusively in the hands of the Chinese, has taken on an entirely different character. The Chinese raised only an inferior breed, which was maintained on ponds and which tasted fishy and unsavory. The great demand at present is for muscovies, while a large demand has arisen for duck eggs, especially those from the Indian Runner breed.

Until the establishment of the Territorial market, the small farmer had almost no market for the few cattle, sheep, and pigs which he might be able to raise. All this meat is now handled readily and at a profit to the farmer through the Territorial market. The market has also made it possible to secure in Honolulu a regular supply of limes and Hawaiian seedling oranges. These products had formerly gone to waste for the most part. The seedling oranges are a delicious fruit, more juicy and of better flavor than the oranges imported from California. A promising market has also been opened for Hawaiian grapefruit, breadfruit, avocados, mangoes, papayas, poha, jams, jellies, watermelons, mountain apple, and various other fruits and fruit products.

Before the establishment of the marketing division a large part of the corn consumed in the Territory was imported from Seattle and Manchuria. The market demand is now satisfied largely from growers on the various islands, and on account of the regular supply of fresh local corn the use of corn for feeding purposes is extending. It is a curious fact that corn had been used in Honolulu only for feeding chickens, and not as a horse and mule feed.

During the first year of the existence of the Territorial market the monthly receipt and sale of farmers' produce increased from $85 to $6,000. The total value of the produce received and handled during the year was $26,500, at a cost of $2,000. The funds originally provided by the Territory for conducting the market were so limited that a charge had to be made against the produce for the actual expense of handling, the Territorial funds being sufficient only for the salaries of the men directly engaged in developing and maintaining the market. Arrangements were made by which cold storage was provided for berries, butter, meat, and other articles on board the island steamships. By an understanding with the company which operates the steamships all produce consigned to the Territorial market is accepted without prepaying the freight and monthly bills for freight are rendered to the superintendent of the market. The freight charges against each consignor are deducted from the proceeds of his consignment before remittance is made. In this way a great saving is effected in the matter of bookkeeping on the part of the steamship company and the company has been willing to grant more favorable rates. A large increase in their local business between the different islands has awakened sufficient interest on the part of the officers of the steamship companies to induce them to provide better facilities for the transportation of perishable produce. Before the establishment of the market the ships' crews had little experience in handling any perishable products, the freight being mostly sugar, fertilizers, and live stock on the hoof. As a result of the cooperation of the officers of the interisland steamships, farm produce has received more attention and more careful handling, with the result that it reaches the market in better condition than heretofore.

Simultaneously with this awakening of interest in local products on the part of steamship companies there has been an increased effort among the farmers themselves to crate and pack their produce in a satisfactory manner. Before any efforts at practical instruction along this line were put forth, the farmers of various races were without any hint as to the demands of the market regarding size and character of packages. The produce was sent in bags, loose crates, and various unattractive and totally inadequate containers, suffering greatly from bruising and heating or fermentation en route. While these difficulties have not been entirely overcome, great improvement in this regard is noted.

The farm produce received at the Territorial market is sold chiefly at wholesale to Army posts, hotels, boarding houses, hospitals, schools, and other institutions. A number of neighborhood groups of householders have been formed in various parts of Honolulu and these groups buy cooperatively of the Territoral market through a representative appointed by each group. In addition to the wholesale trade, a retail business of considerable proportions is done at the market. It was hoped in the first place that it might be possible to avoid the trouble of carrying on a retail business at the market. It was found necessary, however, to yield to the insistent demand of numerous individuals who wish to buy fresh local produce on the day of its arrival in smaller quantities than are considered in wholesale trade. The retail trade has involved particularly the purchase of live fowls, pohas, watermelons, and butter.

## OTHER LINES OF FARM BUSINESS ENCOURAGED; PURE-BRED STOCK; SEED PRODUCTION.

In addition to the weekly list of prevailing prices issued by the marketing division and furnished to all farmers and newspapers, a list of breeders of pure-bred stock has been compiled and kept up to date by a card system, so that inquiring purchasers may be referred directly to individuals who have pure-bred stock for sale. In this work, as well as in the general increase in the use of local products, the actual receipts and sales of the marketing division indicate only a portion of the effect of the market in increasing the utilization of home products. Through the agency of the market, many sales and standing orders have been arranged which of course do not appear on the books of the Territorial market. The actual increase in the handling of local farm products upon the markets of Honolulu as a result of the establishment of the Territorial market is therefore much greater than would appear by the sales account of the market. Moreover, as already indicated, most of the local cooperative associations of farmers devoted their first efforts to a study of their immediate local markets and to supplying the demands of these markets. In some cases it required the efforts of a year or more before the local farmers were able to supply the demands of their local town markets.

## IMPROVEMENT OF METHODS OF PACKING AND HANDLING.

The demand for reliable farm and garden seeds of varieties preferred in the Honolulu market and known to be adapted to the Hawaiian climate became so great that the marketing division was forced to make an arrangement by means of competitive bids for purchasing quantities of such seed and selling it to the farmers at cost price. This branch of the business in the marketing division has increased rapidly and is generally welcomed as a much-needed relief from the unsatisfactory seed markets to which the Hawaiian farmer previously had access. A number of Hawaiian farmers have gone into the business of producing seed for sale, and in such instances individual sales of their seed and standing orders have been arranged through the marketing division. The opportunity for the local production of seed seems to be greatest in the case of corn, cowpeas, jack beans, pigeon peas, Sudan grass, etc.

During the first year much of the time of the working force of the marketing division was absorbed in bringing about better methods of packing and handling produce, in organizing local communities into associations so as to simplify the inevitably elaborate bookkeeping of cooperative business, in furnishing more detailed information to farmers as to the quantities of farm produce demanded in Honolulu, the varieties preferred, and the seasons when best prices may be expected, and in making known to the citizens of Honolulu the merits of locally grown produce and of the need of supporting the Honolulu market in order to encourage the establishment of a solid farming population in the Territory. Incidentally in connection with this work it soon became apparent that certain products could be grown in Hawaii in larger quantities than could be consumed in the Hawaiian markets. The Bermuda onion crop, although consumed in large quantities by the permanent population and by the Army posts in the neighborhood of Honolulu, overran all limits of local consumption and had to be shipped to the mainland. Satisfactory prices were obtained and no difficulty was experienced in shipping onions from Honolulu to San Francisco. Similarly with sweet potatoes, which mature at all months of the year in Hawaii, it was found that from May to July, during the off season in San Francisco, prices ranging from 4 to 8 cents a pound could be obtained in that city. Several shipments of sweet potatoes were made during this season with satisfactory results. From time to time an active demand for beans was manifest on the west coast, and it was found possible for the Territorial market to arrange, through the various farmers' co-operative associations, for large supplies of dry beans for shipment to San Francisco.

## BRANCH MARKET IN SAN FRANCISCO.

The first year's work of the Territorial market showed clearly the necessity of maintaining a branch market in San Francisco for handling Hawaiian products. Thus far all shipments of produce to San Francisco have been made by consignment, but it became evident that the business could be much increased by having an agent of the Territorial market in San Francisco. Naturally, his interest in the development of the business would be greater than that of the commission men, to whom the receipt of shipments of Hawaiian produce was merely an incidental matter. A recommendation to this effect was made to the governor and the legislature, with the result that at the 1915 session of the legislature provision was made for maintaining a branch office of the Territorial market in San Francisco. Thus the Hawaii marketing division began operations in San Francisco July 1, 1915. Its main business thus far has been the handling of fresh pineapples. The Hawaiian pineapple canneries had reduced the price of pineapples and offered only $5 to $10 a ton for first-grade pineapples instead of $18 to $21, which had previously been the prevailing price. Since in Hawaii it costs in different localities from $12 to $14 a ton to produce pineapples it was necessary that the small growers secure some other outlet for their fruit in order to avoid losses. It could not be foretold whether the old prices would be reestablished after a slump of one year's duration, but an attempt was made to market fresh pineapples in San Francisco in order to relieve the local situation. There had been a persistent tradition in Honolulu

FIG 1.—WHERE THE PINEAPPLES GROW.

FIG. 2.—GATHERING AND SORTING PINEAPPLES.

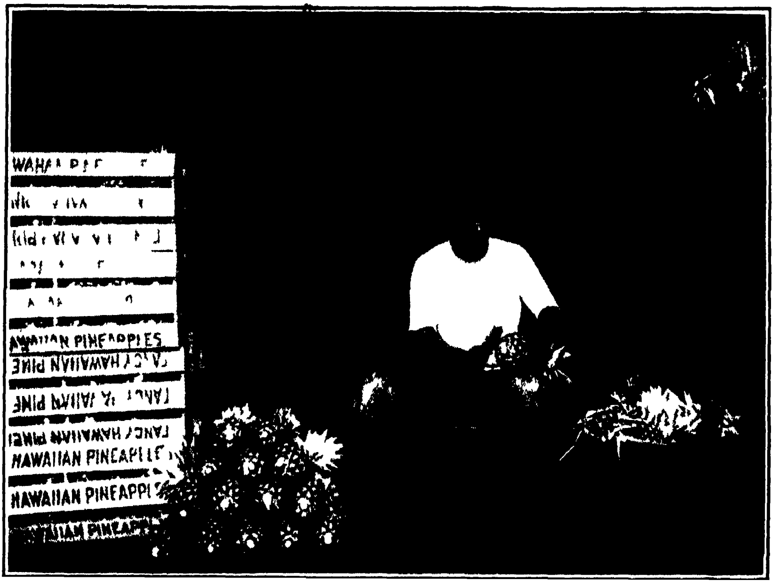


FIG 1 —CLEANING THE PINEAPPLES WITH A WIRE BRUSH BEFORE PACKING

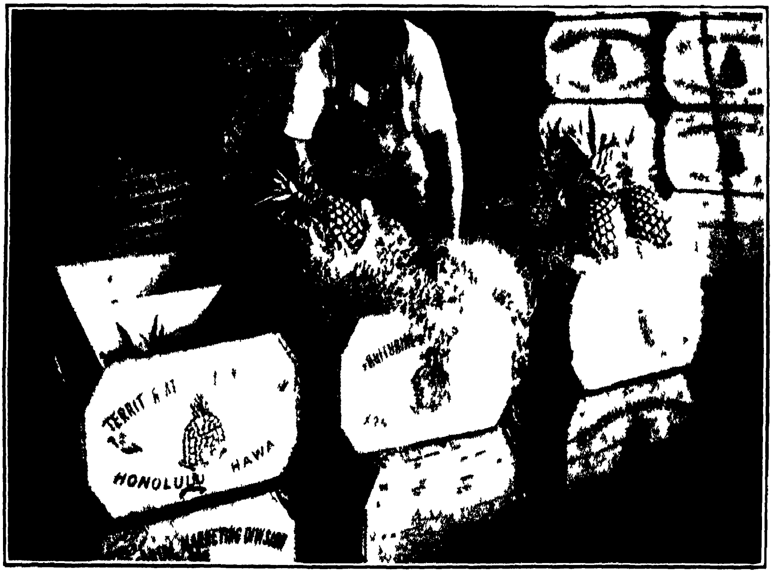


FIG 2 —PACKING PINEAPPLES FOR SHIPMENT

that pineapples would not stand shipment well to San Francisco and that only a few cases a week would be demanded by the markets of the west coast. It was found almost immediately, however, after the establishment of the branch office in San Francisco that the difficulty of pineapple marketing lay not with losses suffered during shipment nor in securing a market for the fruit, but in securing space on the steamships plying between Honolulu and San Francisco. Thus far it has not been possible to meet satisfactorily more than a small fraction of the orders for Hawaiian pineapples, and this failure is due entirely to a lack of transportation facilities. It is believed, however, that these facilities will be improved in the near future. With the prevalence of the fruit fly in Hawaii, unfortunately, no fruit can be shipped to San Francisco except pineapples and bananas. If, however, adequate transportation facilities for carrying these fruits were supplied, the trade in fresh pineapples and Chinese bananas and cooking bananas might be expected to increase rapidly.

## APPROPRIATIONS FOR THE WORK.

The substantial recognition of the services of the marketing division to the Hawaiian farmers and to the Territory as a whole is shown by the action of the legislature at its session in 1915. An appropriation of $14,400 was made for a building to be used as headquarters of the marketing division in Honolulu. This building is already nearly completed, is conveniently located, both with regard to the steamship wharves and the railroad station, as well as to the commercial produce houses of Honolulu. The Territorial appropriation also carried an item of $7,500 to be used as a revolving fund to enable a prompter remittance to the farmer. During the first two years of the existence of the Territorial market no fund of this sort was available. It was necessary, therefore, to conduct the business of the market absolutely without capital, a rather anomalous procedure. The only inconvenience in this system, however, was the occasional delay in making remittances to consignors. It was obviously necessary to receive payment from sales before remittance could be made to consignors. Most of the business was carried on a monthly basis, and since even monthly credit was given only to responsible institutions no losses were suffered. The possession of a revolving fund, however, will make it possible to remit promptly to the producer and thus encourage the individual farmer.

In addition to the funds already mentioned, the appropriation carried an item of $24,000 for the biennial period, or $1,000 a month, for maintenance. This is considered sufficient for the maintenance of the main market in Honolulu and also the branch office in San Francisco.

## RESULTS.

The substantial results from the establishment of the Territorial market have been far greater than were even anticipated by its friends and promoters. Starting with unorganized and isolated farming communities of different races, it has brought these men together to the mutual benefit of all concerned. Beginning with a farming population which had been originally laborers and totally without information as to market requirements for farm products, it has brought about a striking improvement in the grading and packing of tropical fruits and products to the benefit of the farmer and of the consumer in Honolulu and on the mainland. Initiating a practical market system among a set of farmers who were thoroughly discouraged as to the prospects of carrying on general agriculture in Hawaii, it has shown that reasonable profits can be derived from diversified agriculture in Hawaii.

# UNPROFITABLE ACRES.

By J. C. McDowell,
*Agriculturist, Office of Farm Management.*

OUR farm management investigations show that on almost every farm a portion of the area is carried at a loss and that on this account a large percentage of farms are unprofitable. After deducting a fair rate of interest on the investment and allowing that portion of the living which is furnished by the farm, including house rent, it was found that over 30 per cent of the large number of farms studied during the past year had nothing left with which to pay for the labor spent upon them. In many cases the operator paid something for the privilege of working.

We hear many uncomplimentary things said about the unprofitable dairy cow, the "boarder," supported from the profits of the remainder of the herd, but on many farms the unprofitable cow is not the only boarder. Low-yielding acres, like boarder cows, are often fatal to successful farming. Our farm survey records show that areas of poorly drained, compact, and sour soils, or soils low in humus, greatly reduce net profits. Sometimes these records show that as much as 30 per cent of the entire farm acreage does not produce enough to pay its way.

One farm in Wisconsin, on which records were recently taken, has 40 acres of poorly drained land that in its present condition is practically worthless. Twenty-five dollars per acre spent in drainage will make this 40-acre tract the equal of any in that district, and good land is selling there at $150 per acre. A small portion of similar land on this farm has already been tile-drained and is now producing a fair profit on each acre so improved.

The successful business man always tries to weed out all unprofitable enterprises and to expand those that pay a profit. Unprofitable acres can not always be disposed of as readily as boarder cows, but usually they can be improved until they become profit bearing. If the income from such land can not be increased it is quite possible that the labor spent upon it can be reduced until the income at least pays a little more than the cost of labor.

## ITEMIZE BEFORE PURCHASING.

In buying a farm, unprofitable acres that can not easily be made profitable should ordinarily be considered as having little or no agricultural value. They may even be a burden to their owner, in which case they have a negative value. A farmer was about to buy a quarter-section farm in the corn belt at $100 per acre. This appeared to him to be a very reasonable price for a farm in that region, until a careful analysis of the proposition called his attention to the large amount of waste land on the farm. Actual measurements and careful estimates furnished the following data:

| | |
|---|---|
| 80 acres rich, sandy loam, not stony, not rough, gently sloping, well drained; actual value $125 per acre; $125×80 | $10,000 |
| 45 acres poor land, sandy, stony, rough, hilly, probably of little or no agricultural value; actual value | 0 |
| 35 acres poor pasture land, wet land that can be drained, but that can not be drained at a profit; actual value $10 per acre; $10×35 | 350 |
| Buildings | 2,450 |
| Total | 12,800 |

$12,800÷160=$80.

These figures gave the farm, including buildings, a value of $80 per acre, though a part of it was worth considerably more than the average price per acre asked for the farm. An itemized study of the farm, acre by acre, and a detailed study of fences, buildings, and other improvements, should always be made before purchasing. Such investigation often calls attention to enough unprofitable acres to stop the sale.

## PROFIT INFLUENCED BY NUMBER OF ACRES.

The size of the business often has much to do toward making the farm profitable. Farm-management records show that farms are often either too small or too large for the most successful farming. There may be too few as well as too many acres. A man may not have enough land or he may be "land poor," thereby rendering all his acres unprofitable.

About 30 years ago a Wisconsin farmer with a large family was deep in debt. His farm consisted of 120 acres, half of which was under the plow. The remainder was woodland and expensive to clear. For 12 years the farmer had not been quite able to meet his interest. To him the whole farm consisted of unprofitable acres. He finally decided that the farm was too small for the most efficient use of the labor available. Having an opportunity, he bought an adjoining 80 acres of cleared land, going in debt the full amount of the purchase price. From that time on the farm was prosperous, and in 10 years the entire farm was paid for and enough additional money saved to build a good house and barn. During this period there had been no great change in prices of farm products. The smaller farm had been unprofitable because the overhead expenses were too high for so small a business. In this case acres were made profitable by increasing their number.

In the early nineties a North Dakota farmer owned 3 quarter sections of land. His farm was quite heavily mortgaged and for a number of years he had not been able to pay interest in full. His family was small and for most of the work he had to depend on hired help. He concluded that under the circumstances he was working, or trying to work, too many acres. Finally, he sold a quarter section and paid his debts. Seven years later he had $5,000 in the bank. Increased prices of farm products during this period only account in part for this farmer's increased prosperity. In this case all the acres had been unprofitable largely because there were too many of them.

## UNPROFITABLE ACRES DECREASE AVERAGE YIELD.

A decreased yield per acre in any State may indicate poorer methods of farming and less profitable farming. Contrary to public opinion, however, it may, and often does, indicate exactly the reverse. In districts where commercial fertilizers are not used, statistics frequently show that as prices go up the average yield per acre goes down. Better prices for wheat have caused large areas of wheat to be grown in the drier districts of the Central West on land that can not be made to produce large yields per acre. This lowers the average yield of wheat in these States at the very time that the farmers are improving their methods in order to have more wheat to sell at the higher price. In this way increased prices often lower the average yield of farm crops over considerable areas by bringing what were formerly unprofitable acres under successful cultivation.

The extensions of agriculture into regions that formerly could not be farmed at a profit may be due to a variety of causes, among which may be mentioned higher prices, better cultural methods, more efficient machinery, and immigration due to a general increase of population. All these factors combined to push both the corn belt and the wheat belt farther and farther west, thus developing large areas of land that had previously been considered worthless. The decreased average yield of corn per acre in some of our Western States is perhaps due more to increased acreage than to depletion of soil fertility. In the following table it will be noted that for Kansas and Nebraska there seems to be a direct relation between large acreage and low yield per acre.

*Yield of corn as related to acreage.*

| Years. | Kansas. | | Nebraska. | |
|---|---|---|---|---|
| | Average annual acreage. | Average yield per acre. | Average annual acreage. | Average yield per acre. |
| | | *Bushels.* | | *Bushels.* |
| 1871-1880....... | 1,040,037 | 33.7 | 822,209 | 35.7 |
| 1881-1890....... | 4,997,125 | 27.6 | 3,309,961 | 31.5 |
| 1891-1900.. .. . | 7,357,234 | 21.9 | 6,636,385 | 26.4 |
| 1901-1910....... | 7,298,172 | 22.1 | 7,642,217 | 26.1 |

In this table it will be noted that average yields go down as the acreage increases, and that when the acreage becomes practically constant the yields do the same. The acreage for the 10-year period 1901–1910 is practically the same as it was for the preceding 10 years and the yield is approximately the same for both of these 10-year periods. Other causes, such as variation in seasons, greatly influence the average yield of crops, but in this table the effect of climatic conditions for any particular year is minimized by taking 10-year averages. Sometimes our farming methods are criticized on the ground that they have decreased the yields by robbing the soil, when, as a matter of fact, the decreased average yield may be due in part to the bringing of less productive land under cultivation.

### DEVELOPMENT OF UNIMPROVED LAND.

The Government irrigation projects have brought under successful cultivation millions of acres of arid land by applying water to acres that formerly were unprofitable. There are still large areas to be improved in the same way. The drainage of the immense swamp areas is also reclaiming many acres that are not only unprofitable but that are often a menace to health and a hindrance to travel and transportation. The clearing of the cut-over districts and the improvement of methods used in dry-farming are also doing much to make unprofitable acres profitable. However, irrigation, drainage, land clearing, and dry-farming include so much that is foreign to our subject that they permit only of brief mention here.

### NONPRODUCING ACRES INCREASED BY LAND SPECULATION.

The cut-over districts of northern Michigan, northern Wisconsin, and northern Minnesota contain more than 30,000,000 acres of undeveloped land. Some of this produces enough timber or furnishes enough pasture to pay its way, but by far the larger part of this vast area must be classed as unprofitable. Quite a percentage of the best of the undeveloped land is now owned by land speculators and some of it is held at prices that make its successful development at present financially impossible. Similar conditions prevail in many parts of the West Central and Western States. (Pl. X.)

A report on file in the Office of Farm Management tells of delayed agricultural development along a certain railroad in a Western State. For a long distance the railroad traverses a belt of level and fertile but undeveloped prairie land. Less desirable land at a distance of 8 to 10 miles back from the railroad is quite well developed and producing fair crops. At first it seems very strange that the most fertile and best located land should be the slowest to develop. Further investigation disclosed the fact that the undeveloped land was owned by speculators and held at prices that made its development practically prohibitive. In a more limited way these conditions are found in all the new agricultural sections. Land speculators have not only greatly inflated the prices of land, but they are to-day holding a tremendous area out of production altogether. The unearned increment may eventually enrich the present owners, but to the general public these acres are all unprofitable. How to discourage excessive land speculation is a problem that is now puzzling many of the wisest men in our legislative assemblies. The solution of this problem would materially decrease one source of unprofitable acres in this country.

In the suburbs of nearly every city there is a considerable area of rich agricultural land that has been cut up into city lots and sold at prices that prevent its profitable use for agricultural purposes. Such land is held for speculation and for many years it may serve no useful purpose whatever. (Pl. XI.) In fact, these vacant lots are often badly kept, unsightly, and a menace to the health of the community. It would undoubtedly have been better if this land could have been left in farms until such time as it may be needed for building purposes. The area of each lot is small, but the total area of such unprofitable land is very great.

How to prevent this misuse and waste of good agricultural land that is so well located is not an easy problem. Vacant city lots are being used to encourage vegetable gardening in connection with boys' and girls' club work. This undertaking is meeting with some success, but by far the greater part of such land can never be used in this way.

We hear much comment about the great profits that are sometimes made by holding idle land for rise in price. The cost of holding this land is usually overlooked. Taxes and a fair rate of interest on the investment take a big slice of the unearned increment, and often unimproved city property is actually held at a loss. Not infrequently the present owners and possibly the general public would have been the

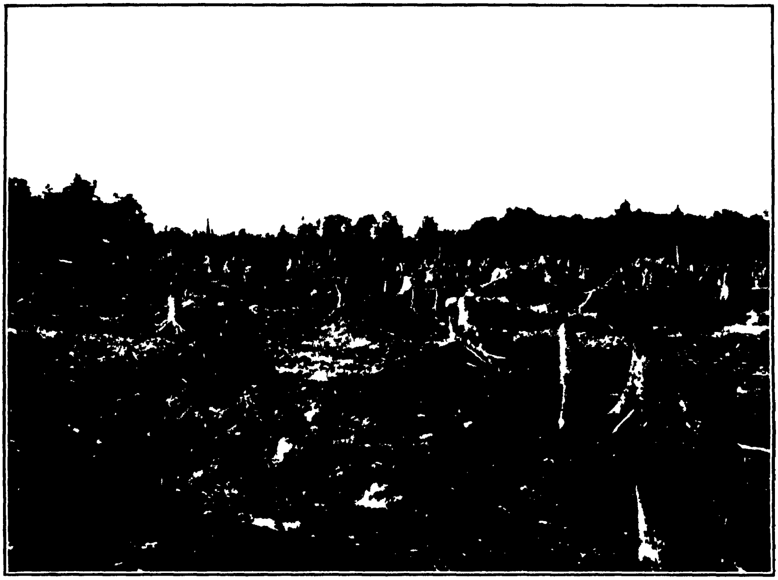


FIG. 1.—HARDWOOD STUMP LAND. GOOD SOIL, COMPARATIVELY EASY TO CLEAR AND MAKE PROFITABLE.

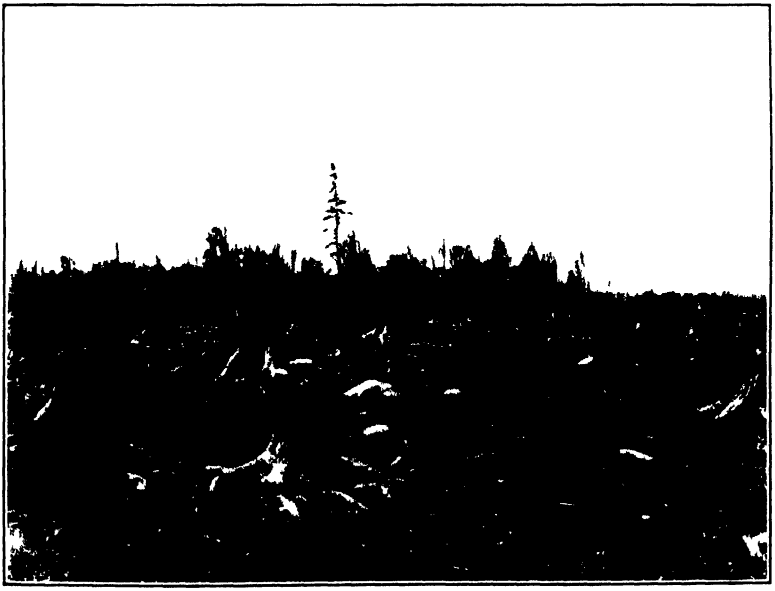


FIG. 2.—PINE AND HARDWOOD STUMP LAND. SOIL OF FAIR QUALITY, QUITE DIFFICULT TO CLEAR AND MAKE PROFITABLE.

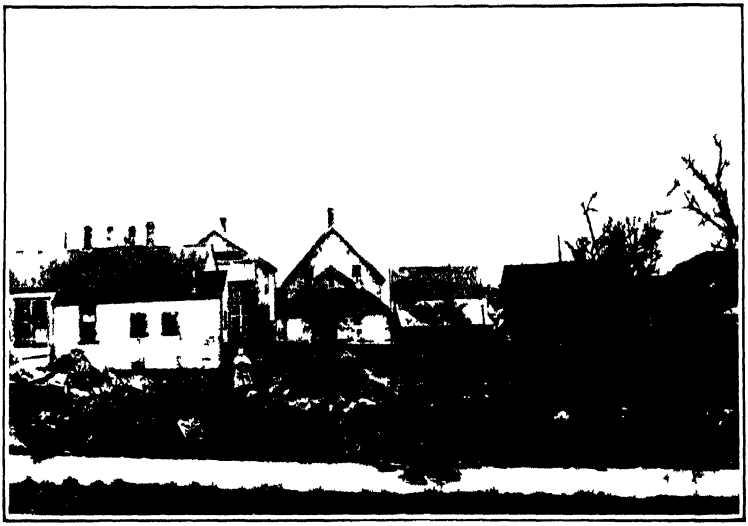


FIG. 1.—A VACANT CITY LOT EARLY IN THE SPRING OF 1914.

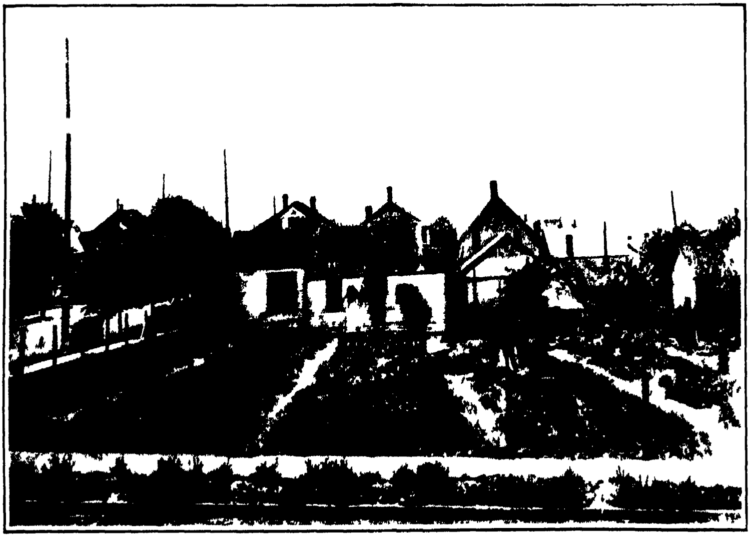


FIG. 2.—SAME LOT, AUGUST 15, 1914, AFTER IT HAD BEEN TRANSFORMED INTO A SPOT OF BEAUTY AND UTILITY.

Photographs by States Relations Service, Boys' and Girls' Club Work.

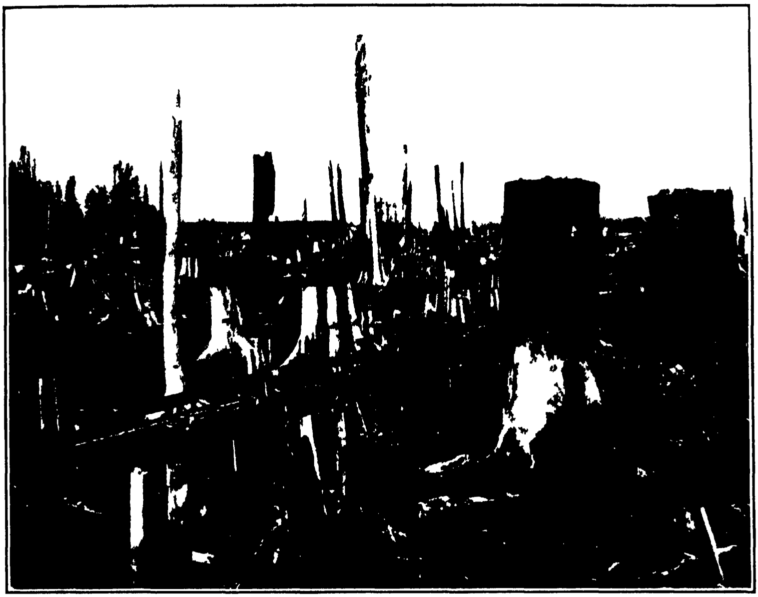


FIG. 1.—FIR AND CEDAR STUMP LAND. GOOD SOIL BUT VERY EXPENSIVE TO CLEAR.

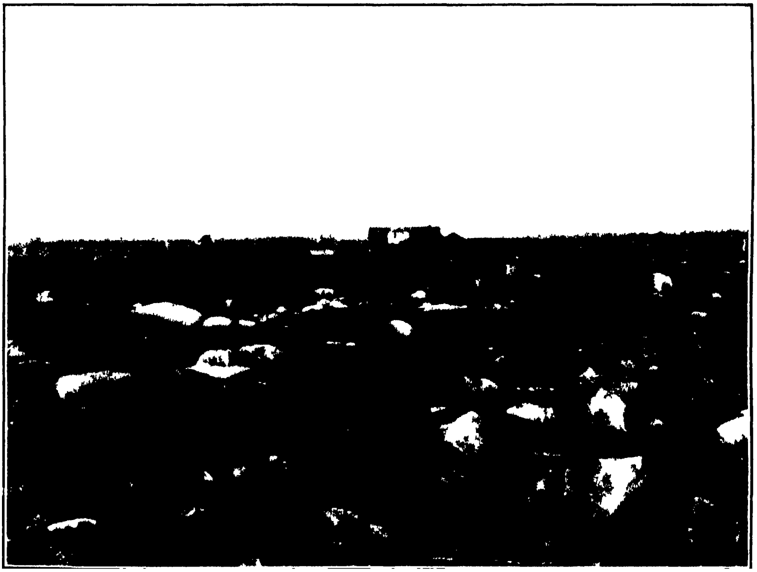


FIG. 2.—STONY LAND. VERY HARD TO CLEAR AND NOT WORTH MUCH WHEN CLEARED.

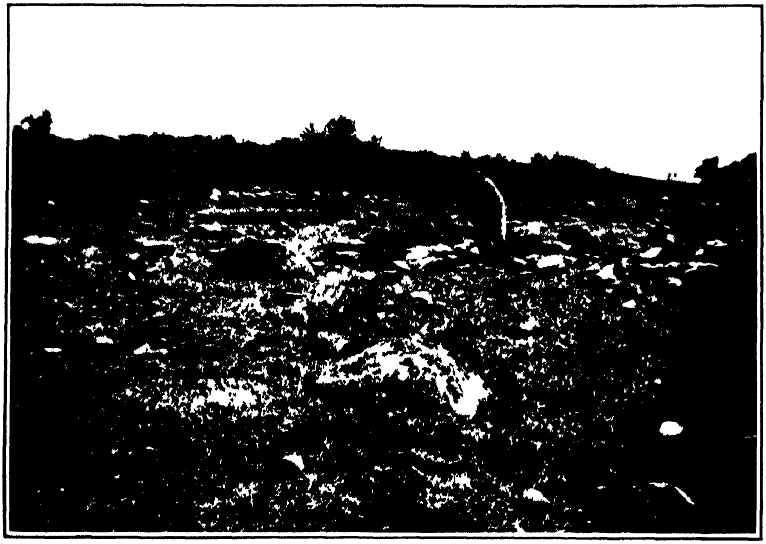


FIG. 1.—"UNPROFITABLE ACRES" ON A MASSACHUSETTS FARM IN THE SPRING OF 1914.

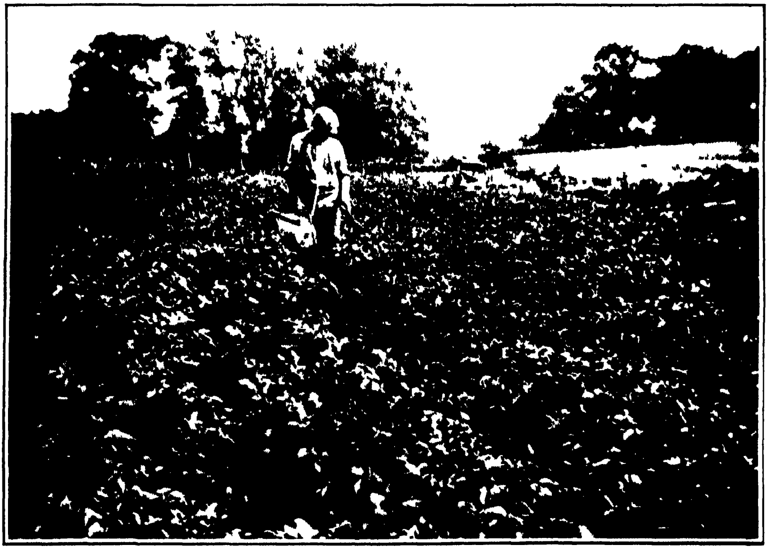


FIG. 2.—SAME LAND, LATE SUMMER OF SAME YEAR.

Photographs by States Relations Service, Boys' and Girls' Club Work.

gainers if unused suburban lots had been left in farms. In dividing rich agricultural land into city lots the desire to get something for nothing has added materially to the total number of unprofitable acres.

## IMPROVEMENT DEPENDS ON DEMAND.

A considerable percentage of our unprofitable land doubtless never can be brought under successful cultivation by any methods now known. (Pl. XII.) It is also true that the sudden advancement of all our arable land to a point where each farm would become 100 per cent efficient might seriously affect the business side of farming by lowering the prices of agricultural products. Yet as population increases all classes of people will undoubtedly be benefited if the rapidly rising price of farm products can be met at least in part by setting idle acres to work and by making unprofitable acres yield a satisfactory income. (Pl. XIII.)

To meet the growing demand for farm products we must farm more acres or make each acre produce more. Land not now in farms should be made into farms, and unimproved land now in farms should be improved, only in so far as this can be done profitably.

## UTILIZATION OF UNPROFITABLE ACRES.

To what extent and at what rate we should attempt to decrease the number of unprofitable acres depends largely on the increased demand for agricultural products. The law of diminishing returns prevents the reclamation of waste land until the rising prices or cheaper methods of production make such action practicable. Frequently it pays better to spend time and money in the further improvement of acres that are now profitable rather than in the reclamation of less desirable land.

Much money and valuable time is lost each year in almost every locality in the attempt to put unprofitable acres on a paying basis. Lack of satisfactory agricultural credit forces many a deserving family to waste time in trying to get a start on acres that moneyed men pass by. Misleading advertisements and inflated magazine articles have lured many a family to give up a comfortable living in the city to drag out a miserable existence in toil and worry on worthless land. Lack of knowledge of the business side of farming is largely responsible for loss in the management of unprofitable acres. The problem of how to prevent a waste of money, time, and energy in the attempt to develop worthless land is worthy of careful study. At best such waste can only partially be prevented. The pity of it is that so much of this loss falls on those who can least afford to lose.

Every farmer who owns unprofitable land should make a detailed examination of his farm, acre by acre, to detect all unprofitable areas. Next, he should determine the approximate cost of making each acre pay its way. Such study will disclose what and how much is needed in the way of manure, commercial fertilizer, drainage, or other preparation, to produce satisfactory crop yields. This analytical study of each portion of the farm will sometimes call attention to many acres that can not be cultivated profitably. It is better to leave such land in permanent pasture, or even to let it lie idle, than to work it at a loss. The farm not only furnishes a home, but it is a place of business. As such, each enterprise and acre should receive individual attention, and, so far as practicable, the entire farm should be placed on a paying basis.

# SHIPPING FISH THREE THOUSAND MILES TO MARKET.

By E. D Clark, *Bureau of Chemistry.*

MILLIONS of pounds of halibut and salmon are shipped each year across the United States from the Pacific to the Atlantic coast. Few of the persons who help to consume this vast supply realize that the fish has come overland. They imagine that its freshness is due to their own proximity to the ocean and believe that if they were so unfortunate as to live far inland good sea food would be unattainable.

As a matter of fact, it is the Pacific, not the Atlantic, which now furnishes the bulk of the salmon and halibut consumed in the country. For various reasons the Atlantic catches have diminished to such an extent in recent years that the supply from this source would be quite insufficient to supply even the large cities along the coast itself. On the other hand, the catches in the Pacific are enormous. The fisheries of Alaska alone yield annually products that are valued at two or three times the $7,000,000 paid to Russia in 1867 for the Territory, and the annual output of the Pacific salmon canneries is valued at $30,000,000. Sixty million pounds of fresh halibut alone were shipped east last year.

Refrigerator cars and artificial freezing have made possible the development of an industry which now regularly supplies even New England, the traditional home of American fishing, with fresh fish from the far West. At first the Pacific fishermen canned their salmon and sold what they could of their halibut to the local markets. The latter, however, could not begin to make away with all that the ocean offered. There were more fish than people to eat them and it was not until the possibility of sending them across the continent had been demonstrated that the Pacific fisheries became really profitable.

To-day fast express trains carry carloads of fresh salmon and halibut from the Pacific to the Atlantic in from 5 to 7 days. Packed carefully in ice from the time they leave the waters of the northern Pacific to the moment they are delivered to the consumer, these fish when they appear upon the table are practically indistinguishable in flavor and appearance from those that have been caught a few hours' sail away. From 20,000 to 24,000 pounds of fish are hauled in each car, so that the value of the shipment is sufficient to justify, from a business point of view, the care that is indispensable if it is to reach the market in good condition.

Though halibut and salmon are frequently shipped in the same cars, they are usually packed somewhat differently. When the halibut boats reach the docks, the fish are swung out of the hold in large rope nets caught up by the four corners. These nets are swung over to the "heading tables" and the fish dumped out. There they are decapitated, the operators hooking each fish with the left hand and slicing off the heads with a large knife held in the right hand. The headless fish, which have already been cleaned on board ship, are then packed in large boxes, the bottoms of which are covered with layers of cracked ice. More ice is placed upon the fish before the boxes are nailed down. From 350 to 450 pounds are packed in each box.

Salmon, on the other hand, are brought to the shippers in smaller lots and they are packed in smaller and flatter boxes than the halibut. Before packing, moreover, the fish are gone over very carefully and any defect, such as soft flesh or lack of brightness, results in their rejection (Pl. XIV, fig. 1). Shipments for the Atlantic coast are usually packed undressed; other fish are cleaned first.

As soon as they are filled, both salmon and halibut boxes are stored away in the refrigerator express cars waiting for them on the docks. These cars have already been thoroughly cooled by the ice in their bunkers and more ice is thrown over the boxes before the car is closed for its journey. The temperature in the interior is thus reduced to a point so low that comparatively little of the ice melts on the road, but icing stations are distributed along the route and the supply in the car is renewed from time to time.

Although these methods have succeeded in making practically the entire country an accessible market for Pacific fish, the supply is so great at certain seasons of the year that it has become necessary to devise other means to pre-

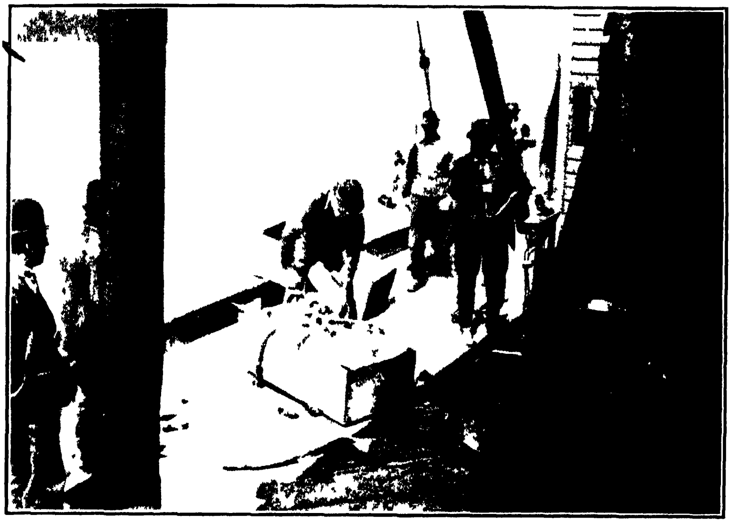


FIG. 1.—GLIMPSE OF PROCESS OF UNLOADING, CULLING, AND WEIGHING PACIFIC SALMON

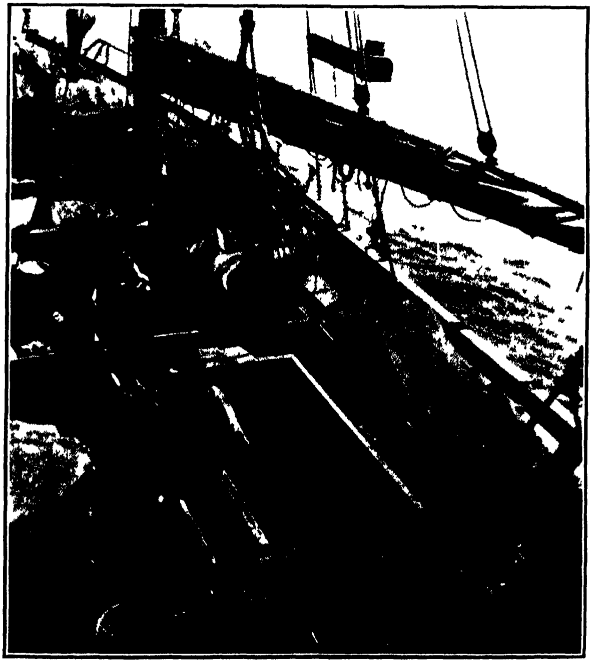
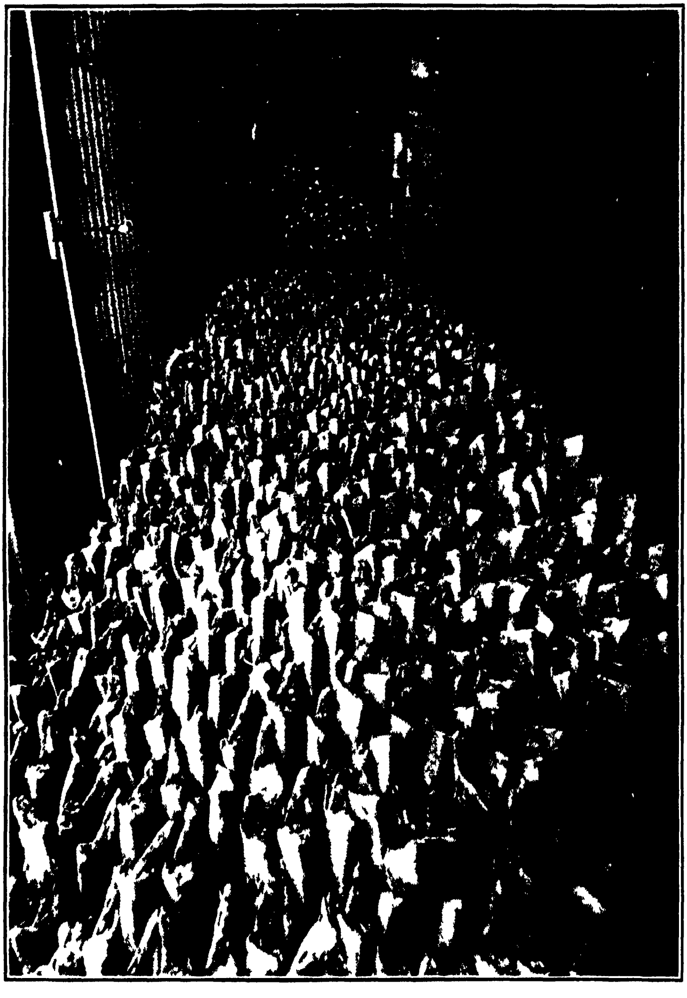


FIG. 2.—"SLING" FULL OF HALIBUT BEING LIFTED OUT OF THE HOLD OF A BOAT AT SEATTLE.

PLATE XV.



FROZEN HALIBUT IN PILES AWAITING THE GLAZING PROCESS IN A PACIFIC PLANT WHICH FREEZES 3,500,000 POUNDS OF FISH EACH YEAR.

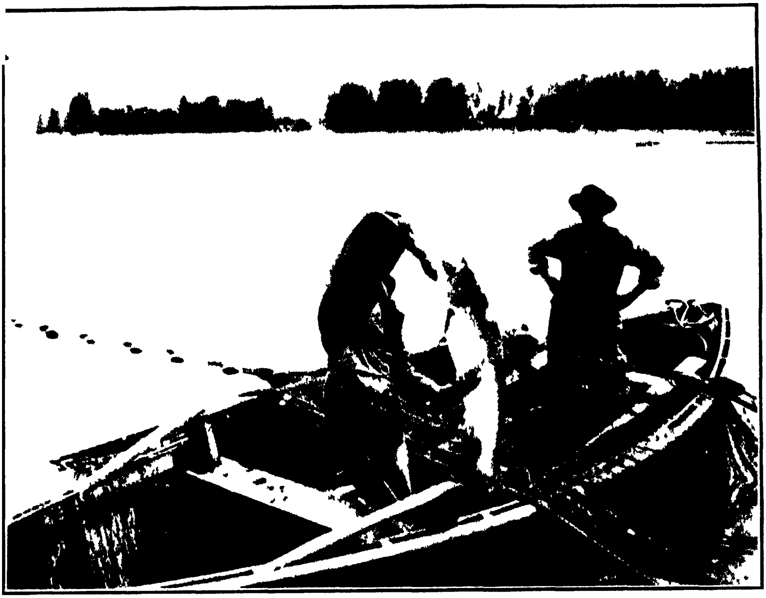


FIG. 1.—TAKING A LARGE CHINOOK SALMON FROM A SEINE IN THE COLUMBIA RIVER.

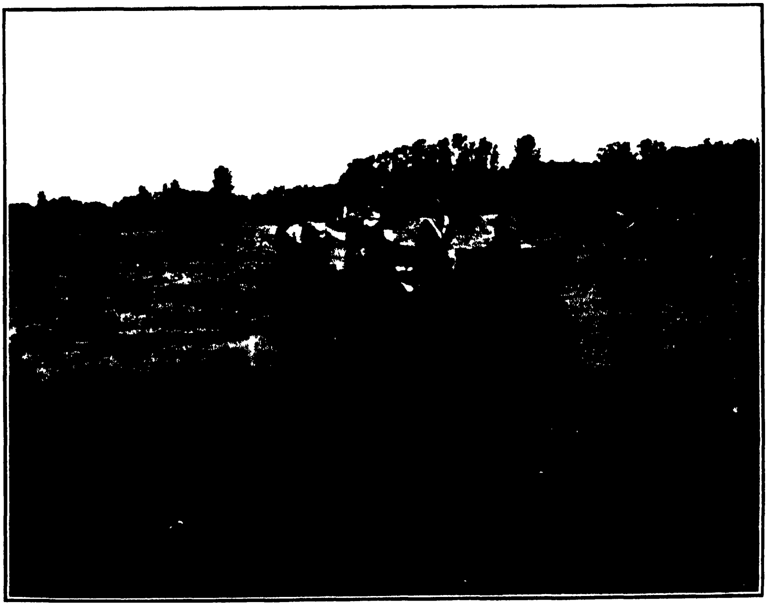


FIG. 2.—HORSE SEINE ON THE COLUMBIA RIVER BEING EMPTIED OF SALMON.

vent a large part of the yield from going to waste. Accordingly, great quantities of both salmon and halibut are now frozen and kept in cold storage to be marketed during the winter, when fresh fish of these species are not available. (See Pl. XV.)

In preparing fish for the freezer the first step is to wash off all blood and slime. This is never done with fish shipped in ice, because the slime has been found to assist materially in excluding the air and consequently in keeping the fish in good condition. With frozen stock, however, the protective covering of slime is not desirable, its purpose being better served by a thin glaze of ice.

From 12 to 24 hours in the "sharp freezer," where the fish rest on brine pipes in a temperature of zero or less, turns the salmon and halibut into a substance that is almost as hard as stone. To store them in this condition, however, would result in their gradually turning white through loss of moisture; while the action of the air would cause deterioration and change in flavor. To prevent this the fish are dipped several times in water in a room so cold that a thin film of ice forms around them, sealing them hermetically and permanently. Thereafter, if kept at a temperature below freezing, the fish remain for months unchanged in appearance or flavor.

The instant they are permitted to thaw, however, deterioration begins. It is, therefore, much to be regretted that the popular prejudice against cold-storage products in general, and frozen fish in particular, tempts many retailers to thaw out their stock and dispose of it to customers as fresh fish. Although it is true, of course, that fresh stock always brings a higher price than frozen, it is probable that the consumer's prejudice, which not infrequently keeps him from buying frozen fish at any price, is more responsible for this practice than the dealer's desire to obtain a little extra money by selling goods under false pretenses. Furthermore, the dealer buys his own supplies of frozen fish at prices which fluctuate widely. He is, however, prevented by the existing prejudice from reflecting to any great extent these fluctuations in the prices at which he sells and he is thus unable to stimulate in this way the demand for his goods. As a matter of fact, both practical experience and scientific research have shown that fish frozen in the manner described retains its flavor and its food value for a long time. There is no reason why anyone should hesitate to eat it and a more general consumption would be profitable to fisherman, dealer, and consumer alike.

At present the annual demand for frozen fish amounts to about 13,000,000 pounds of salmon and steelhead trout, popularly classed with salmon, and 20,000,000 pounds of halibut. Early in the season, when the salmon and trout are still outside of the large rivers and have to be caught by trawling, practically all of the catch is marketed fresh. After the fish have gone up the rivers to spawn, however, seines (Pl. XVI, figs. 1 and 2), gill nets, revolving fish wheels, and traps of many kinds furnish such large yields that the bulk of the sea harvest is either canned or frozen for consumption in the winter, when no fresh salmon are available.

Halibut, on the other hand, is always caught by trawling, both sailboats and steamers being employed in the industry, though steam is coming more and more into favor. The growth of the business and the migratory habits of the fish have resulted in a constant search for new halibut banks, which is now carried on as far northward as Kodiak Island and as far to the south as the Oregon coast.

The actual fishing is done from small dories, a number of which are carried by each parent vessel. These dories, each about 20 feet long, have a crew of two men. The trawl, or fishing gear, consists of hundreds of hooks on long lines, which, if connected together, would sometimes attain a length of several miles. This is baited with herring, squid, etc., and dropped overboard. On populous banks the halibut bite readily and the dory's crew is kept busy hauling in the lines. When the net in the bottom of the dory is filled to its capacity, the parent vessel is signaled to come alongside and take off the catch (Pl. XIV, fig. 2). Once on board the larger boat, the fish are cleaned immediately and their bodies filled with ice and stored in an ice-chilled hold until the cruise is over.

# ANIMAL DISEASE AND OUR FOOD SUPPLY.

By Edward B. Mitchell.

(Prepared under the direction of Chief of the Bureau of Animal Industry.)

FOOT-AND-MOUTH disease was discovered in the United States in October, 1914. Between that time and November 1, 1915, when it existed only in a small area in Illinois, its suppression cost the lives of 168,158 animals, valued at approximately $5,676,000. This loss created consternation. The attention of the entire country was attracted to it and in several quarters the fear was expressed that the elimination of the disease by the slaughter of the exposed herds would lead to a serious shortage in the meat supply.

As a matter of fact, less than one-tenth of 1 per cent of the total number of the cattle, sheep, and swine on the farms of the country were killed in this way. That is to say, less than one meat animal out of every thousand was slaughtered to save the rest. The money that the country paid to rid itself of an exceptionally costly outbreak was less than 3 per cent of the annual tax that other animal diseases levy upon it.

If we should be compelled, on account of the foot-and-mouth disease, to throw away year after year the meat, the milk, and the hides of from 150,000 to 200,000 animals, it would, with justice, be regarded as a serious blow to the prosperity of the country. We are, however, throwing away so much more than this that, in comparison, the additional and unusual loss from the foot-and-mouth disease is insignificant.

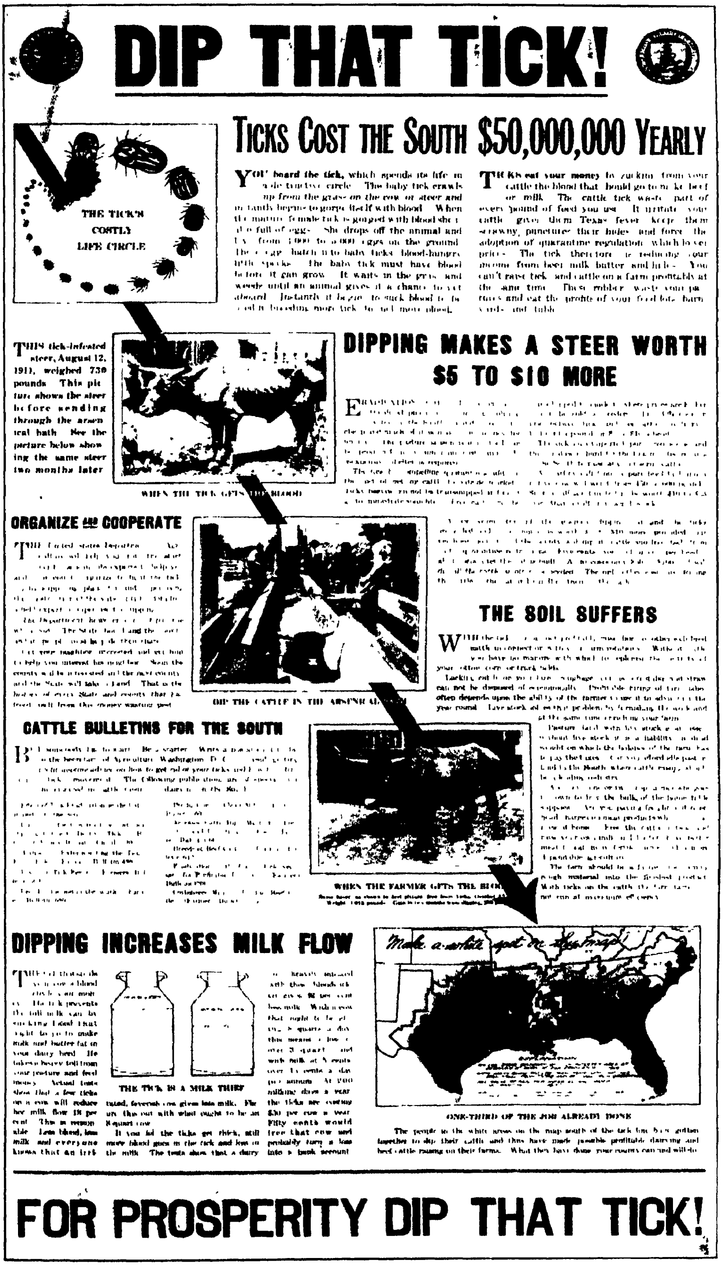
It is impossible to state with exactitude even the direct losses from animal diseases, but it is estimated that they amount to $212,000,000 a year. The indirect losses defy all calculation. It is certain, however, that by discouraging the industry of stock raising they not only hinder the development of sound agriculture but materially increase the cost of living for both the rural and the urban population.

The variety of maladies which afflict animals is, of course, almost as great as that to which mankind is subject; the number of diseases which are sufficiently widespread to be matters of economic importance is, however, comparatively limited. In the annual report of the Secretary of Agriculture for the fiscal year ending June 30, 1915, they, and the losses ascribed to each, are listed as follows:

| | |
|---|---|
| Hog cholera | $75, 000, 000 |
| Texas fever and cattle ticks | 40, 000, 000 |
| Tuberculosis | 25, 000, 000 |
| Contagious abortion | 20, 000, 000 |
| Blackleg | 6, 000, 000 |
| Anthrax | 1, 500, 000 |
| Scabies of sheep and cattle | 4, 600, 000 |
| Glanders | 5, 000, 000 |
| Other live-stock diseases | 22, 000, 000 |
| Parasites | 5, 000, 000 |
| Poultry diseases | 8, 750, 000 |

In the case of a number of these diseases the means of control have already been discovered and total eradication waits only upon the realization by the people of the efficacy and economy of the measures which science recommends. This is particularly true of the cattle tick, the cause of splenetic or Texas fever, and a parasite that, directly and indirectly, is responsible for far greater losses than the $40,000,000 charged against it in the table indicate. In 1906 an area of 741,515 square miles in the South was under Federal quarantine because of this pest. From this area no cattle could be shipped unless they had been previously dipped in arsenical baths under Federal supervision or were sent for immediate slaughter in special cars to special markets, where they were handled and disposed of apart from other stock and brought their owners from one-half cent to a cent a pound less than clean cattle. To-day the quarantined area is only 465,733 square miles—less than two-thirds of what it was—and additional territory is being released each year. The complete extinction of the tick is only a question of time and determination on the part of those concerned. (See Pl. XVII.)

This progress has been made possible by the systematic dipping of herds in arsenical baths, the value of which was ascertained only comparatively recently. It was not, indeed,



# DIP THAT TICK!

## TICKS COST THE SOUTH $50,000,000 YEARLY

THE TICK'S COSTLY LIFE CIRCLE

## DIPPING MAKES A STEER WORTH $5 TO $10 MORE

THIS tick-infested steer, August 12, 1911, weighed 730 pounds. This picture shows the steer before sending through the arsenical bath. See the picture below showing the same steer two months later.

WHEN THE TICK GETS THE BLOOD

## ORGANIZE AND COOPERATE

DIP THE CATTLE IN THE ARSENICAL BATH

## THE SOIL SUFFERS

## CATTLE BULLETINS FOR THE SOUTH

WHEN THE FARMER GETS THE BLOOD

## DIPPING INCREASES MILK FLOW

THE TICK IS A MILK THIEF

ONE-THIRD OF THE JOB ALREADY DONE

## FOR PROSPERITY DIP THAT TICK!

A GOVERNMENT POSTER WIDELY DISTRIBUTED IN THE SOUTH.

The complete extinction of the tick is only a question of time.

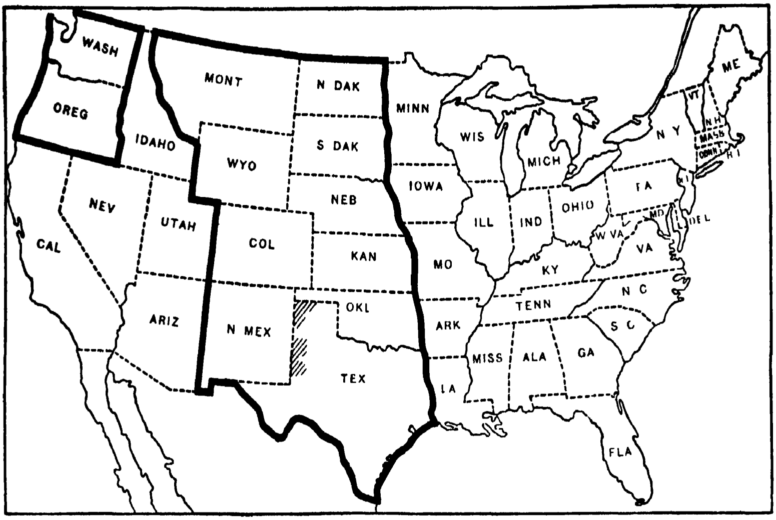


FIG. 1.—THE CONQUEST OF CATTLE SCABIES.

The area within the heavy lines was under quarantine in 1905. To-day all that is left of this quarantine is the shaded portion in Texas.

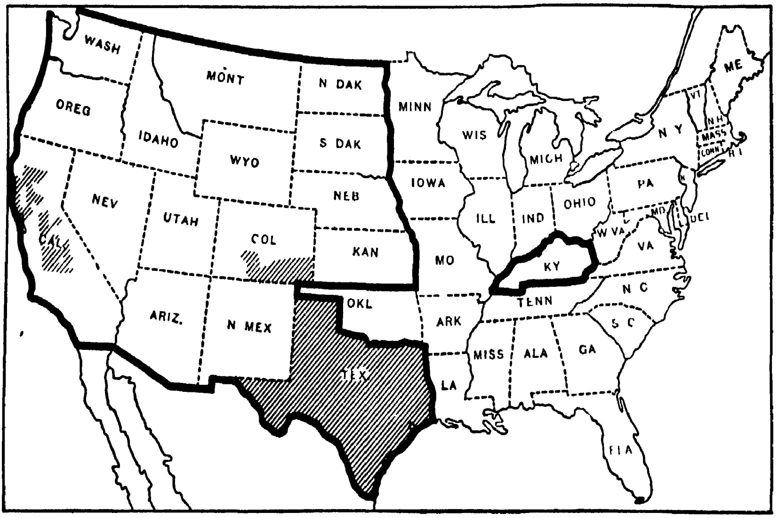


FIG. 2.—THE VANISHING SHEEP SCABIES.

In 1903 all the territory within the black lines was quarantined for this disease. The quarantine has now been reduced to the shaded areas.

until field experiments by the Bureau of Animal Industry in 1889 and 1890 had demonstrated that the tick played an essential part in the dissemination of splenetic or Texas fever that the true importance of the insect was realized and scientists began to attack with vigor the economic problem that it presented. The experiments referred to are especially noteworthy, not only because of the impetus which they gave to the war upon the tick, but because they were the first to demonstrate that certain diseases can be conveyed to one victim from another only through the intervention of some animal or insect, acting as an intermediary host. The public has since been familiarized with this principle through the subsequent discovery that mosquitoes spread malaria and yellow fever and rats the bubonic plague. It is common knowledge that in the case of yellow fever the practical application of this knowledge has made possible the digging of the Panama Canal without the appalling sacrifice of human life which would otherwise have been inevitable.

The evil that the tick does is, however, by no means confined to the spread of splenetic fever. In the course of the many years that it has flourished in the South, cattle have been developed which are to a great extent immune to the fever. They suffer from the tick, however, in a multitude of other ways. Ticks swarm upon immune cattle as freely as upon nonimmune, and though they do not give them fever they suck the blood that should go to the making of beef and milk. The fact that "ticky" beef cattle sell for less per pound than tick-free cattle has already been pointed out. They also weigh less. Furthermore, because of the danger of fever, it is impracticable to import purebred stock from tick-free sections in order to grade up the herds. In short, a ticky steer is too often a scrawny, unprofitable scrub, whose owner can scarcely be expected to compete with cattle raisers elsewhere. The dairyman is in no better position. Experiments have shown that the milk production of a herd infested with ticks is from 18 to 40 per cent below what it should be, the exact percentage, of course, depending upon the degree of infestation. The value of the hides is also materially reduced by the punctures made by the ticks in their search for blood.

To offset these and similar facts there is nothing but the trifling cost and trouble of systematic dipping. In several counties in Alabama which were freed from quarantine on December 1, 1915, it was found that the cost of eradication to the county had ranged from 18 to 50 cents per head of cattle. The increased value of each animal is greatly in excess of this modest sum, one inquiry into this point having resulted in an estimated average increase of $9.76 per head.

The benefits to the South, and indeed to the entire country, of tick eradication are not, however, to be measured by the increased value of a few hundred thousand cattle. The need for diversification has long been apparent in the South, but diversification in agriculture rests, to an important extent, upon profitable live stock. With the tick the raising of live stock is not an attractive enterprise; without the tick there is no reason why the cattle industry in the South should not attain a magnitude which will utterly dwarf its present proportions. Because of its vital effect upon the prosperity of the whole Nation, and in particular upon the meat supply, tick eradication is not a matter that should be—or that, in fact, is being—left to one section to deal with. State and Nation are cooperating with the individual counties in driving out the pest. Last year was the most successful one in the history of the work, and there is every reason for confidence that the country will soon be freed from this incubus of long standing.

Like the tick, the mite that is the cause of the disease variously known as scabies, range itch, cattle itch, and mange is being successfully attacked by dipping infested stock in solutions that destroy the parasites but do not injure the animals. The work of eliminating this mite has, however, been brought nearer completion than in the case of the tick. Of the 1,269,844 square miles placed under quarantine for scabies of cattle on June 1, 1905, there now remain less than 20,000, located in the northwestern corner of Texas. (Pl. XVIII, fig. 1.) Although there is no doubt that this comparatively small area will be cleaned before long, there will still be need of rigid inspection of cattle at market centers in order to prevent the spread of sporadic outbreaks.

Scabies is a contagious disease conveyed by either direct or indirect contact with infested animals. The parasite that causes the disease in its common form lives on the surface of the skin and its biting leads to great irritation and itching. It also multiplies with astonishing rapidity, so that an extraordinary number of the mites may often be found on a small area of skin. When the parasites have spread over a large surface of the body, the afflicted animal loses flesh and becomes so weak that its powers of resistance are much impaired. This condition leads to an even more rapid multiplication of the mites. Death sometimes results, especially at the end of severe winters or with young stock. Mature animals in good condition do not appear to be so susceptible.

The parasite of scabies in cattle is closely allied to that which causes a similar disease in sheep. Against both the most effective measure is a bath in a lime and sulphur solution, administered in much the same way that cattle are dipped for the tick. At the present time the territory affected by this sheep disease covers the better part of Texas and California, with a few counties in Colorado—in all an area of about 324,827 square miles. (Pl. XVIII, fig. 2.) In 1903, when the work of eradicating the disease under quarantine was first taken up, the quarantined area was 1,784,596 square miles. The subsequent freeing of nearly 1,500,000 square miles has been accomplished by the cooperation with the Federal Government of the State legislatures, the live-stock associations, the transportation companies, and the banking interests.

Cooperation of this kind, it may be said, is an absolute essential to success in the elimination of contagious animal diseases of this character. In the campaign against the foot-and-mouth disease it was demonstrated that those communities in which cooperation was the most thorough suffered the least, and in the eradication of the tick permanently successful results have been obtained only in those counties in which public opinion earnestly indorsed the enforcement of the necessary regulations for systematic dipping.

There is another and important class of diseases for which the remedy lies not in the destruction of parasites but in the conferring of immunity upon the susceptible animals by the use of vaccines and serums. Prominent in this class are blackleg and anthrax. Because of its economic importance at that time in France, Pasteur devoted much of his time to anthrax, and his experiments were among the first to demonstrate the possibilities of immunization in the control of human as well as animal diseases.

Anthrax affects both man and animals, but it is most common in cattle, horses, mules, and sheep. In this country its ravages occur chiefly among the first, because the most severely infected regions are in the South, where comparatively few sheep are kept. The disease is most prevalent in wet, low places; in particular, the delta lands of the Mississippi Valley appear to be thoroughly permeated with it. Animals contract it almost invariably by grazing on infected pastures, in which the virus persists with extraordinary tenacity. The germs, or their spores, maintain their existence under the most unfavorable conditions, and there are instances on record in which herds have become infected by pastures which had been allowed to remain idle for years in the hope of ridding them of the disease. Obviously, this greatly increases the difficulty of eradication. It is, in fact, believed that the only possible way of controlling the disease is by the general use of the protective vaccine.

In this treatment great strides have been made since Pasteur began his experiments in 1881. Though the vaccine that he developed proved its usefulness at once, the disease disappearing from several regions in which it had formerly worked much destruction, there were, nevertheless, a number of grave objections to its use. The keeping qualities of the vaccine were poor, its strength uncertain, and, in consequence, there was a double danger in its use; it might be so weak that it exerted no beneficial effect, and it might be so strong that it conferred the disease instead of immunity upon the animal. The latter was especially liable to be the case when the disease had already made its appearance in the herd and the animal was exposed to infection from outside sources as well as to the vaccine.

These objections led to the development of a serum made from the blood of hyperimmunized animals; that is to say, animals which, by repeated injections of the vaccine, had developed in their blood extraordinary resistance to anthrax. Serum obtained in this way possesses not only a preventive but a curative value, and in a few instances has been used with success in the treatment of anthrax in man. With animals its use is recommended whenever the disease has already appeared in the herd. In such cases, however, the dose should be repeated at intervals of from 3 to 5 weeks. Where, on the other hand, there is no danger that stock has as yet been exposed to the infection, the use of the so-called simultaneous method is to be preferred to either the serum or the Pasteur vaccine. This method consists of simultaneous injections of the serum and of a standardized spore vaccine recently developed by scientists in the Bureau of Animal Industry. The great advantages possessed by this vaccine are its superior keeping qualities and the accuracy with which the strength of the dose can be gauged. In consequence, a greater and more lasting immunity can be conferred upon the animal with less risk.

Anthrax and blackleg, sometimes called symptomatic anthrax, are so similar that until a comparatively short time ago they were not recognized as distinct diseases. The two are, however, caused by different germs and protection against one does not imply protection against the other. As a matter of fact, however, the two diseases rarely occur in the same territory, the greatest losses from blackleg taking place on the large ranges in the West and Southwest, while anthrax, as has been said, is particularly prevalent in the low-lying sections of the South.

Like anthrax, however, the only practical method of controlling blackleg is by preventive vaccination. The disease is so very generally fatal that attempts at treating the stricken animal by bleeding and forced exercise usually succeed only in spreading a wide trail of infection over the neighborhood, without the least benefit to the victim or its owner. Vaccination, on the other hand, has resulted in reducing the loss from this particular disease to less than one-half of 1 per cent. In infected regions where vaccination is not practiced the loss of cattle through blackleg frequently exceeds that from all other causes combined, and in some sections has amounted to 10 per cent of the annual calf crop. A further argument for the use of the vaccine—if one were needed—is the fact that the disease shows a marked preference for high-grade stock and for animals in good condition. The money losses from it are, therefore, high in proportion to the number of animals killed, and vaccination becomes a desirable and economical form of insurance. That this fact is well recognized is shown by the fact that since the Bureau of Animal Industry began the distribution of blackleg vaccine 18 years ago 24,000,000 doses have been sent out, and it is probable that at least 20,000,000 animals have been vaccinated.

Vaccination for such diseases as blackleg and anthrax serves a double purpose. It not only protects the inoculated animal but it prevents that animal's assisting in the spread of the disease. Despite the discouraging persistency with which blackleg and anthrax spores cling to infected pastures, it is obvious that with the gradual immunization of all susceptible animals their chief opportunity for reproduction will be gone and that in time they will virtually cease to exist—as factors of economic importance, at least. It is to the interest of every stock owner, therefore, not only to use these preventive measures himself but to encourage his neighbors to do so also.

It is not, however, every disease that can be guarded against in this way. Among cattle diseases contagious abortion is in economic importance second only to tuberculosis, and this has so far resisted all attempts to deal with it by means of serums or curative agents of any sort. Up to the present the only known means of combating the disease are thorough disinfection of both premises and animals and the segregation of infected stock.

In the table printed on page 160 the annual losses from contagious abortion have been placed at $20,000,000. It is, however, difficult to obtain exact figures on this disease, and it is not improbable that the losses are actually much greater than this estimate. One authority, indeed, has placed them at $10,000,000 for the dairy herds of New York State alone. This disease is an insidious one. A cow may have it for several months without revealing any symptoms, and in the meantime the infection may spread through the entire herd. Reproduction is then seriously interfered with, and the calves that are born are frequently victims of white scours and pneumonia. The cows also may suffer in a number of ways as the direct result of the contagion.

To guard against this danger scientists recommend a thorough system of disinfection, preferably under the supervision of a veterinarian, the cost of which is estimated at $4 a year for each animal. The whole subject of contagious abortion is, however, one for further study.

Unlike most animal diseases, tuberculosis attacks not only the prosperity but the health of the country. The importance of its elimination, therefore, can not be measured by the money loss that it causes, though this is exceeded only by that due to hog cholera and the cattle tick. Unfortunately no real success has as yet been attained in rendering cattle immune to the disease, and the only means that can be recommended for its suppression are sanitation, the segregation of all infected animals, and the slaughter of advanced cases.

The chief danger to mankind from tuberculosis in cattle arises from the fact that the contagion may be transmitted in the milk of infected cows. Thorough pasteurization is, of course, a safeguard against this, as it is against other dangers that lurk in raw milk, but pasteurization is neither always thorough nor always practiced. The meat from tuberculous animals, though it is less likely than the milk to convey the disease, is also regarded as dangerous, and for this reason the carcasses of such animals, when slaughtered under Federal inspection, are condemned in whole or in part as unfit for human food.

Tuberculosis is, in fact, the chief cause of the condemnation of meat under the Federal meat-inspection law. During the fiscal year ending June 30, 1915, approximately 58,000,000 cattle, sheep, swine, and goats were slaughtered under Federal inspection. Of these, 587,760, a little more than 1 per cent, were found to have tuberculosis in a stage sufficiently advanced to necessitate the condemnation of the carcass, either in whole or in part. These figures, however, do not accurately represent the real prevalence of animal tuberculosis in the United States. Only about 60 per cent of the meat annually consumed in the country is slaughtered under Federal inspection, the great bulk of the remainder being furnished by animals killed in local abattoirs from which it is impossible to obtain accurate statistics. It is, however, well known that animals strongly suspected of having tuberculosis often are not shipped to Federal-inspected slaughterhouses, but are killed elsewhere for the express purpose of escaping condemnation. It is obvious, therefore, that if one could obtain figures for the entire country the percentage of tubercular animals would be higher than is indicated by the reports of the Federal meat-inspection service.

Though it affects all classes of cattle and is common among hogs, tuberculosis works the worst havoc in dairy herds. A summary made by Dr. Melvin of tuberculin tests covering a period of 15 years showed that out of 400,000 cattle tested 9.25 per cent reacted. From this it was concluded that about 10 per cent of milch cows and 1 per cent of beef cattle were affected. In certain sections of the country a much higher percentage has been found. In the region around San Francisco Bay, for example, Dr. Ward, of the Bureau of Animal Industry, found that 31 per cent of 1,022 cattle reacted to the test. In another case an even higher percentage was found in range cattle in California. In general, however, it may be said that the disease is more prevalent among cattle which are comparatively closely confined, like purebred stock and dairy herds, than among those which have plenty of open air. Possibly, for this reason, tuberculosis appears to be more general in the neighborhood of large cities. It is also, as has been said, common among hogs, but as the disease develops very slowly these animals are usually slaughtered before it has had an opportunity to render the entire carcass worthless for food.

The slow development and the insidious character of tuberculosis have rendered the tuberculin test of great importance in its control. This fluid contains the product of the tubercle germs without the germs themselves. It can not, therefore, convey the disease, and when injected into a healthy animal produces no noticeable effects. With tubercular animals, however, it causes a brief attack of fever which is known as the reaction and is regarded as conclusive proof of the existence of the disease, even when it is impossible to detect other symptoms.

A cow that reacts to this test should be at once removed from the rest of the herd and her milk, if used at all, thoroughly pasteurized. Her attendant should not be permitted to care for healthy animals, and if she gives birth to a calf, it should be removed immediately and brought up by hand. If allowed to remain with its mother it will soon contract the disease. In many instances, of course, these precautions involve an expense which makes it simpler to kill the tuberculous cows at once, and this should always be done in cases in which the disease is well developed. It occasionally happens, however, that with good care the animal's natural resistance is sufficient to overcome the disease.

Altogether 20 out of every 1,000 cattle die each year from disease, the great majority from those maladies which have been discussed—tuberculosis, contagious abortion, anthrax, blackleg, scabies, and the tick. As has been seen, some of these it is quite possible to eradicate completely by systematic cooperative work; the damage done by others can be reduced to a minimum by proper attention to sanitary and precautionary measures. This is true also of another disease, one that in all probability is responsible for a greater economic loss than any other in the long catalogue of animal plagues—hog cholera.

The annual loss from hog cholera has been put at $75,000,000. It varies greatly, however, from year to year, and in certain localities has at various times threatened to put a complete stop to the industry of hog raising. Ninety per cent of the hogs that die before slaughter are, it is believed, killed by this disease. In addition it is, next to tuberculosis, the chief cause of the condemnation of meat in Federally-inspected slaughterhouses, the entire carcasses of more than 100,000 hogs having been condemned on this account during the fiscal year 1915.

With anthrax and blackleg hog cholera is in the class of diseases which can be controlled by the use of preventive vaccines or serums. The investigations of the Department of Agriculture, which began as early as 1878, have resulted in the discovery of an anti-hog-cholera serum, which is now manufactured commercially and used extensively throughout the country. Its value is best indicated by the results of field tests begun by the department in 1913 in Dallas County, Iowa, Montgomery County, Ind., and Pettis County, Mo.

In 1912 a total of 221,682 hogs were raised in these three counties, of which 63,078 died of cholera, or more than 28 in every hundred. In 1913, 304,514 hogs were raised, the total loss was cut nearly two-thirds, and the percentage of loss reduced to 7.7. Encouraged by a further reduction in 1914, the farmers of these counties raised in 1915 389,173 hogs, of which only 6,665 were lost. In three years the loss per hundred had been lowered from 28.4 to 1.7. In the same period the production of hogs had been increased by more than 75 per cent.

It is hardly possible to ask for a more striking demonstration of the economic benefits of scientific research. It would be a mistake, however, to suppose that these experiments herald the immediate extinction of hog cholera. To a greater or less extent hog cholera exists wherever hogs are raised. To obtain the best results not only are proper preparation and administration of the serum necessary, but community action is essential in order to remove the danger of new infection from neglected sources. The immensity of the problem is such that it can be attacked successfully only when the States and local organizations are in a position to cooperate with the Federal Government. The first and most important steps have been taken already, however, and the rest appears to be largely a matter of time and education.

In addition to the specific diseases mentioned already, there is a varied host of parasites which annually bring death or serious injury to thousands of animals. Scientists recognize approximately a thousand different varieties of these parasites, the control of each variety being a separate problem in itself. In the report of the Secretary of Agriculture the annual loss from this cause, exclusive of that due to the cattle tick and the scabies mite, is placed at $5,000,000. It is quite probable, however, that the actual harm done is greatly in excess of this estimate, for in many cases the farmers themselves are ignorant of the reasons for their losses. It is certain, too, that the prevalence of parasites is one of the main difficulties experienced by stock raisers in tropical countries. The effect of the cattle tick upon agriculture in the South, for instance, has been pointed out already, and the tick is only one particularly well-known example. Among the other more common parasites may be named stomach worms in sheep, and especially in young lambs, lung worms in cattle, tape worms, and "ox warbles." They are usually acquired through the use of infected pastures, and for that reason farm animals are more apt to suffer than those on the range. An increased realization of the economic importance of these destructive agents has led in recent years to careful study of their habits and of the most practical means of combating their attacks. The possibilities for research in this field are, however, almost illimitable.

Poultry diseases are responsible for another important item in the annual loss of food. At the present time poultry products equal in value half of the cotton crop. The industry, however, pays an annual tribute to disease of $8,750,000. Roup, diphtheria, and bird pox sweep through many flocks, blackhead has had a profoundly depressing effect upon the turkey industry, tuberculosis and fowl cholera are common, and white diarrhea, which is transmitted through the egg, has been known to kill every freshly hatched chick on the premises it attacks. The spread of these and other infections has, in some ways, been favored by the substitution of incubators and brooders for the hen, which has resulted in bringing together larger numbers of young chickens than was formerly the case. The necessity for the proper care, housing, and feeding of poultry is, therefore, becoming more and more evident. The relatively short life and small value of the individual bird make attempts at treatment so expensive that they are frequently impracticable and the poultry keeper's chief protection is to be found in surrounding his flock with as healthy conditions as possible.

This, however, applies to all branches of animal husbandry. Enough has been said to indicate that it is not unreasonable to expect that the near future will see a material reduction in the ravages of the chief animal plagues. Disease, however, will always exist in animals, as in man. The Federal Meat-Inspection Service recognizes 42 distinct groups of diseases or conditions which make the meat of the affected animals dangerous or abhorrent. It is not at all likely that science will ever be able to do away with all of these. It has, however, abundantly demonstrated its ability to transform the whole aspect of the stock industry. The weight of hog cholera, tuberculosis, and the cattle tick now lies heavily upon the land. Not only do they withdraw each year from human use animals valued at many millions of dollars, but they discourage the production of other wealth. The benefits that are to follow their eradication are incalculable.

# THE BOYS' PIG CLUB WORK.

By W. F. Ward, *Senior Animal Husbandman, Animal Husbandry Division, Bureau of Animal Industry.*

By means of the boys' pig clubs thousands of boys are being interested and instructed in hog raising, to their pleasure and profit and to the benefit of the community and the country. The influence of such work toward more successful stock farming, good citizenship, and replenishing the nation's larder can not yet be measured.

The first boys' pig club was organized in Caddo Parish, La., in the fall of 1910 with a membership of 59 boys. The organization was directly due to Mr. E. W. Jones, who was superintendent of the rural schools of the county. The pig-club work was outlined somewhat similarly to the corn-club work and was distinctly an outgrowth of it. It was an economic necessity among some of the corn-club members, as it gave them an opportunity of marketing some of their corn through a pig and further encouraged the diversification of crops which was being urged upon the boys as well as upon the farmers.

The work spread rapidly in Louisiana, under the direction of the college officials. In 1912 it was taken up in cooperation with the Bureau of Animal Industry, since which time it has been conducted cooperatively by the bureau and the State agricultural colleges.

## OBJECTS AND PLAN.

The objects of the pig-club work were to interest the boys in swine production, to teach them improved methods of raising and fattening hogs, the value of forage crops, sanitation, good management in handling swine, methods of home curing of meats, and, by means of the pig-club work, to give the boy a broader and better view of farm life, thus making of him a better future citizen.

The pig-club work done by the department is carried on in cooperation with the State agricultural colleges, each of these forces contributing toward the expense. An agent, who is thoroughly acquainted with the practical side of swine raising and has had the benefits of animal husbandry training in an agricultural college, is placed in a State to work under the supervision of the director of extension or his representative in the organization of these clubs. The county is the unit used in organizing the clubs, and where there is a county agent he is usually responsible for the organization and proper conduct of the club work in the county. In counties having no agent or agricultural adviser, some teacher, banker, or other influential person is usually selected as a county leader. The State pig-club agent frequently visits the county leader to advise with him, and together they visit as many of the club members as possible. Personal contact with club members is essential if greatest good is to be accomplished, but as the time of the State pig-club agent is limited, it devolves upon the county leader to make most of the personal visits to the club members.

The State pig-club agent attends public meetings, teachers' institutes, picnics, etc., at which he may use lantern slides, charts, or the pig-club motion-picture film in explaining the manner of organizing the clubs, conducting the club work, and raising hogs under improved conditions. Pig clubs may be organized in several communities in a county, and all of these make up the county association.

The members are required to secure a pig, and feed and care for it according to instructions, keeping complete records of the amount of feed consumed, the gains in weight, cost of the gain per pound, breeding records, etc. At the end of the year the members are required to send reports to the State pig-club agent. Wherever possible the club members must show their pig at the county fair or special exhibition, and the winners at the county fairs usually are required to show their pigs at the State fair.

The cooperation of the school-teachers, bankers, merchants, and other people who can aid in the work is solicited, and the success usually is in proportion to the amount of cooperation received from such people. Teachers often choose pig-club work as a means of getting in closer touch with the pupils and parents, and often are rewarded amply by the increased interest with which school patrons view such activities. The same can often be said of the county agent or adviser. One such county agent in North Carolina stated he had failed to obtain the interest and support which he felt should have been accorded him and could not get the desired response from the people of his county until he started the pig-club work. He further stated that this work did more to put him in close touch with the rural and town people than any other one agency.

The pig-club work means much more than raising a few hogs, making some money, and winning a few prizes. The educational feature is largely responsible for the position which it occupies with the boys, the community, or in the State. As an illustration, a county school superintendent of Texas voluntarily writes the following statements:

> From four years' records I find the pupils belonging to the various clubs have made an average grade on all subjects, except spelling and composition, of 11 per cent more than the children not doing club work. The club members made a general average of 16 per cent more on spelling and 23 per cent more on composition than the other boys and girls.
>
> The club pupils have been active and inspired to do better work, and by this have created and sustained a desire to make researches for new things. Very few club boys and girls in the rural schools of this county stop school, and when they do so it is not of their own choice. There are more than 4,000 boys and girls in the rural schools of this county, and of the number of suspensions and expulsions not one has been a member of the clubs.
>
> Of the club children there is better attendance at Sunday school by 7 per cent and of church services by 5 per cent than among the other children.
>
> We offered a prize on sanitary conditions, and the contest was a heated one, but in every instance the schools doing club work were in the lead, and the prize was won by a school conducting club work and a social center movement.

In addition, the work of the pig club has interested many a boy in study who either disliked school work or was a laggard in his classes. This is well illustrated in North Carolina by two boys who were somewhat dull and who disliked study and books in general, with the result that they always stood near the foot of the class, despite the efforts of teacher and parents. Both boys joined the pig club, secured pigs, and started the work, but were told that to carry on the work they must read all instructions furnished either in the bulletins, circular letters, or personal letters, and must keep accurate records of all their operations. Each became interested in the growth of their pigs to such an extent that he read everything sent to him and finally began reading and studying other matter, with the result that these boys were among the best pupils at the close of the school year.

In Nebraska club work plays an important part in the agricultural education of the pupils in the rural schools. All of the children who belong to a club and carry out one definite project, as the canning-club or pig-club work, are excused from the written examinations in agriculture.

In Washington State one finished club-project is permitted to count 50 per cent of the agriculture or home economics grade, and both the project and the class work are judged accordingly.

Another feature of the boys' work is its educational value to the parents. Many parents reluctantly have permitted their children to join a club; nevertheless, they have finally admitted that they received as much or more good from the work than their boy did. Many farmers have changed absolutely their methods of handling hogs since seeing the result of the son's work with one or more pigs. It has also induced many farmers to purchase for the first time some registered live stock.

The pig-club work is divided into two main sections—that of fattening a meat hog for home consumption or market and that of raising a litter of pigs. The hog-fattening work may end with the sale of the animal or it may be carried further and embrace the ham and bacon club idea, which deals exclusively with methods of slaughtering and home-curing the meat. In such a case a ham and a piece of bacon cured under instructions furnished must be shown at the county fair or exhibition the following year.

It is advisable for members who have had no experience in handling live stock to purchase a grade pig, raise and fatten it for market or slaughter according to instructions, and the following year with the money obtained to secure a grade or purebred gilt and take up hog breeding. This enables a

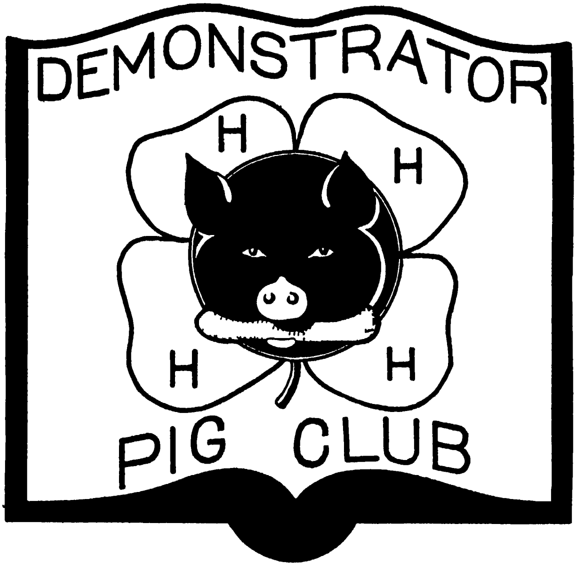


FIG 1.—PIG-CLUB EMBLEM

FIG 2—PREPARING THE PIG FOR THE SHOW RING

Leland Hessar, of Delhi, La, is shown with his pig The pigs are all carefully groomed before entering the ring

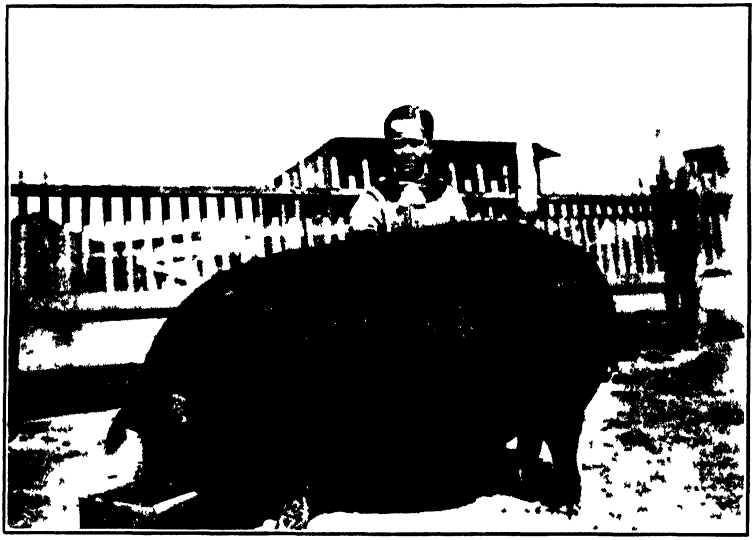


FIG 1 —A WINNER IN TEXAS

Jack Starr, of Midland, Tex and his registered Duroc Jersey pig Age of pig 11 months, weight, 450 pounds

FIG. 2.—THE MASSACHUSETTS PIG CLUB CHAMPION AND HIS PIGS.

Willard Buckler, of Pittsfield, Mass , fed these pigs a standard grain ration while they grazed rape and secured during the last 92 days a gain in weight of 421 pounds, or an average of 2.28 pounds per pig per day

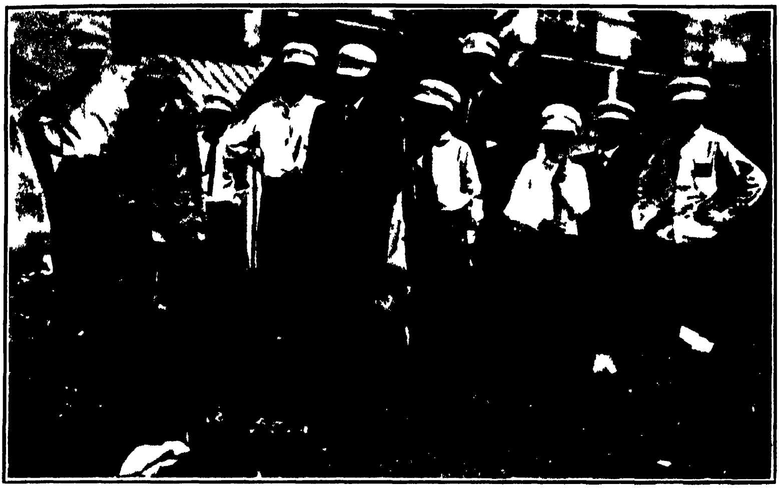


FIG 1 —PIG CLUB BOYS AT THE KENTUCKY STATE FAIR

All three of the hogs are litter mates The large ones were raised by pig club boys and the smaller by a farmer The weights are 21[illegible] 220, and 55 pounds respectively. Good care and feeding make pigs grow

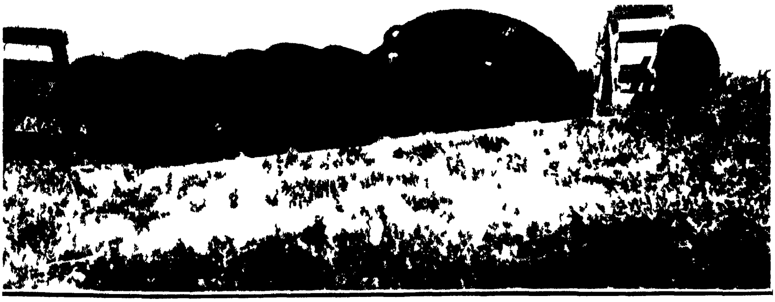
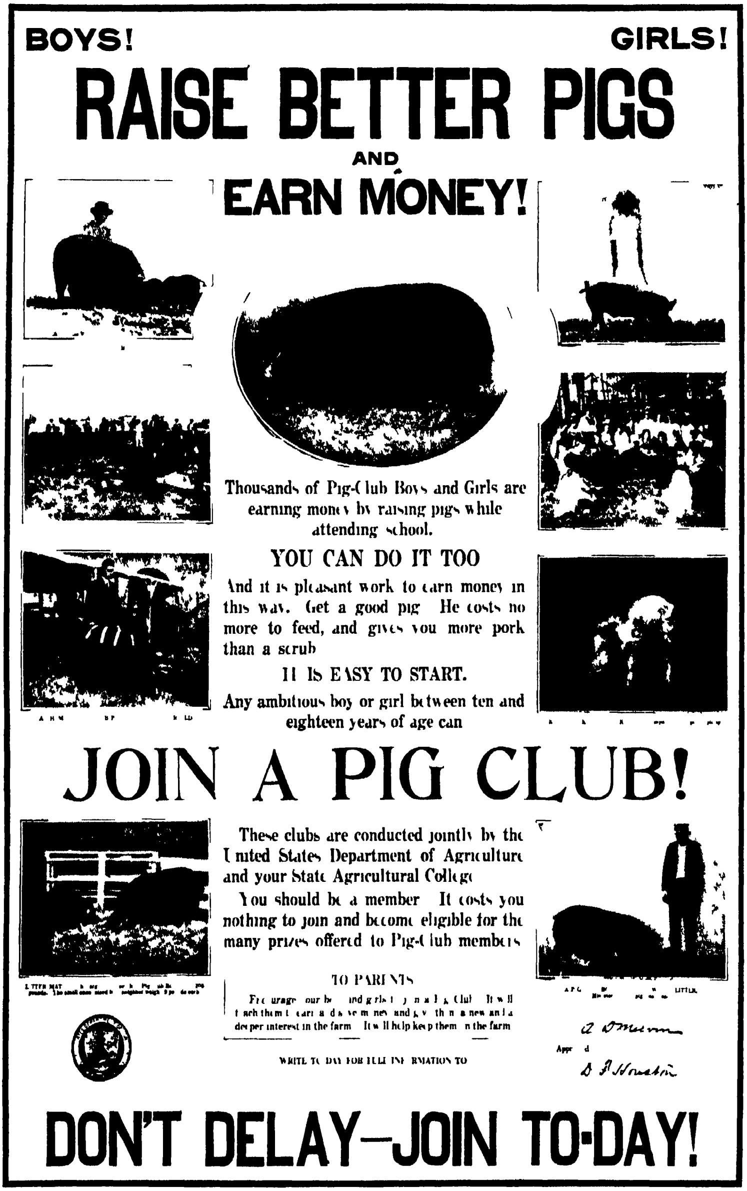


FIG 2.—A SOW AND A PROFITABLE LITTER

John Robert Reid s Duroc sow and litter exhibited at the Louisiana State Fair in 1915 He refused $400 for the lot.



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AND

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### YOU CAN DO IT TOO

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Approved

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# DON'T DELAY—JOIN TO-DAY!

THE PIG CLUB POSTER.

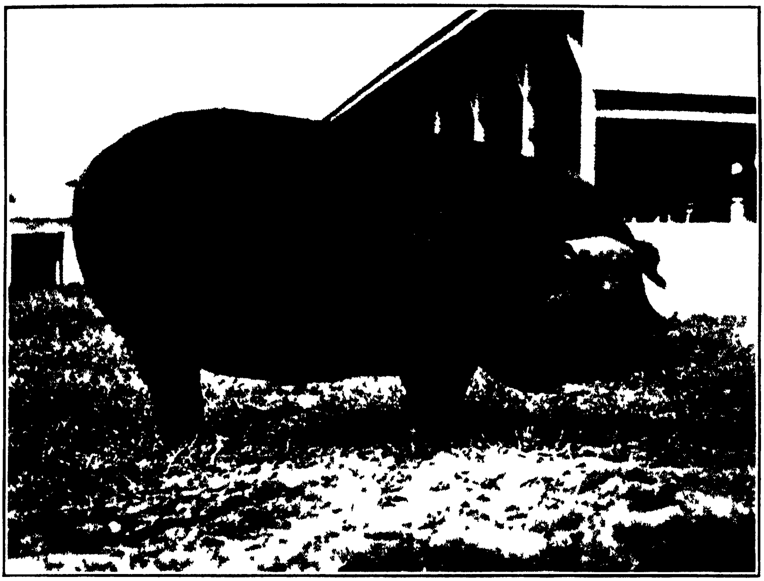


FIG 1. A MARKET-TOPPING BARROW AT THE OKLAHOMA STATE FAIR

This pig was raised by Hatten Travis of Stevens County, Okla., and weighed 430 pounds at 11 months old. He made a net profit of $[illegible].01, besides prize money.

FIG. 2—A NORTH CAROLINA PRIZE WINNER.

This pig was raised by Sam Paul Jones Yow and won at the Greensboro and Raleigh Fairs. She weighed 172 pounds at 5½ months old and the boy refused an offer of $50 for her.

FIG 1 — WINNERS IN THE 1915 GEORGIA PIG CLUB

In 1914 this girl raised an excellent pig that weighed 493 pounds the day it was 10 months old This year she won at the Whitefield County Fair with both registered pigs shown in this picture

FIG 2.— TENNESSEE PIGS WHICH MADE RECORD-BREAKING GAINS

Duroc Jersey litter mates 8½ months old raised by Leon Wootten (on left) and Jesse Loftis, of Lafayette, Tenn These pigs had bluegrass and red clover pasture and were fed corn, shorts, bran, and tankage The gains in weight cost 3 to 3½ cents per pound boy to get his first experience with a cheap grade hog, and he enters the breeding work with one year's experience in caring for a hog. This invariably results in the raising of a good hog or a litter of pigs.

## FINANCING PIG-CLUB MEMBERS.

If a boy has money with which he can buy a pig, or if he can obtain work to earn money for such a purpose, it is always advisable to secure a pig in this manner. There are many worthy boys, however, who can not get money to buy a pig, but who can raise most of the feed for such a pig and can earn enough money to purchase the feed that must be bought. To aid such deserving boys several plans have been tried. At first some bankers thought it would be well to give pigs to some boys, but this is undesirable for several reasons; first, it is not good business policy; second, the pig will not be appreciated as much nor cared for as well as if he is bought; third, many other boys would hesitate about purchasing a pig, thinking that if they waited a pig might be given to them. This plan has been discouraged and others offered in its place.

In a number of counties in various States, banks, business firms, chambers of commerce, or individuals have set aside sums of money which can be loaned to reliable pig-club members who are first approved by the county agent or other responsible person, and who agree to follow all instructions of the pig-club agent, give a note for the pig payable at some future time at a small rate of interest, and agree to submit a final report of the year's work to the party lending the money, as well as to the pig-club agent. Many thousand dollars have been set aside for this purpose, and the money is being used most beneficially. On the note given by the boy is usually a statement signed by the parent to the effect that the parent gives his consent to this arrangement and will not claim any proceeds from the sale of the pig or its progeny. The matter is then handled in a purely business way, giving the boy a lesson in business transactions. Few banks require the parent to sign the note, making him responsible for the boy's debt. The boy is put upon his honor, and very seldom indeed does he betray the trust or confidence placed in him.

The best plan that has been tried is the "endless chain method," whereby the money which is made available for lending to pig-club members is used to purchase a number of good young registered gilts from reliable breeders. These gilts are lent to the boys recommended by the county agent or by a special committee for that purpose, with the distinct understanding that they are to be raised according to instructions furnished by the pig-club agent or county agent, and are to be bred to a registered boar of the same breed. When the litter is weaned, two choice gilts are to be returned to the man furnishing the sow, after which the sow and the remainder of the litter become the property of the pig-club boy. The two gilts are in turn lent to two other pig-club boys, and in this way the number of pigs is constantly increasing.

A form of agreement is used for making the contract with the boys. If the boy fails to fulfill any part of his contract the hog reverts to the original owner. The risk is sometimes borne entirely by the party furnishing the pig, while in other cases the contract states that if the sow dies another shall be furnished to the boy, and he shall be required to return either three or four gilt pigs from the first litter secured.

There are many advantages of this method of financing pig-club boys. A club can be started without a great outlay of cash, and it will grow automatically. A member does not have to borrow money to begin with, which is sometimes objectionable to the parents, for if the boy's pig should die he must obtain money to pay his note, whereas by the chain method he can have another trial. Community breeding can always be started in this manner, only one breed of pigs being furnished to the boys. An extra good boar is often provided, to which the gilts can be bred at a reasonable fee, which is seldom the case where community breeding is not conducted.

Many breeders have adopted this plan of providing breeding stock for club members, as it is usually a profitable transaction for them, and at the same time helps them in a business way. One chamber of commerce in Georgia has set aside money for the purchase of 50 gilts, and this number will increase automatically until good hogs will be found throughout the entire county. The plan also is being successfully carried out in Georgia, Alabama, Arkansas, Oklahoma, and Indiana. Further particulars can be obtained from the Bureau of Animal Iudustry.

## PRIZES AWARDED.

The giving of large cash prizes is discouraged, as it has been found better to give a large number of small and useful prizes. In this way more interest is taken because more boys can win a prize. In Louisiana and Georgia the county pig-club winner usually is given a free trip to the short course at the agricultural college. All prizes, ribbons, awards, etc., are furnished by people or enterprises other than the Department of Agriculture. A national pig-club emblem has been designed for use by the pig-club members in the various States (see Pl. XIX, fig. 1). In most States a pin is awarded to each member completing his work and submitting a record of it.

## SOME RESULTS OF THE PIG-CLUB WORK.

Up to July 1, 1915, the pig-club work was being conducted jointly by the department and the agricultural colleges of Louisiana, Alabama, Georgia, North Carolina, Kentucky, Indiana, and Nebraska. During the fall of 1915 it was taken up in Texas, Arkansas, Oklahoma, Massachusetts, California, and Oregon. The work will be extended to other States as fast as funds permit. During 1915 there were over 10,000 club members in the States named, of whom 5,827 were in Louisiana, Alabama, and Georgia, where the work has been in progress two years or longer.

Some trouble has been experienced in getting the members to keep complete records throughout the year. Inducements have been offered to members sending in complete reports, such as a year's subscription to one of the good swine papers, a free ticket to the State fair, or seed sufficient to plant a pasture and a small area in some forage crops for the pig; but while these have helped to some extent, the percentage of members sending in reports is smaller than it should be. It is hoped that the percentage will increase as the organization is improved from year to year.

The report in 1914 of the members in Alabama showed that the average number of pigs per member in the spring was 1.35 and the average weight was 34 pounds. In the fall the average number of pigs per member was 1.92 and the average weight was 126 pounds. The increase in the number of pigs per member was due to many sows farrowing a litter during the summer, and these young pigs in turn lowered the average weight of the pigs in the fall. The average daily gain per pig was 0.72 pound, made at a cost of $5.20 per 100 pounds. Of all the pigs raised by the pig-club boys in the various States in 1914, the average cost for each 100 pounds gain in live weight varied between $4.25 and $5.20. During that time the price of hogs ranged from $7 to $9 per 100 pounds, showing a good profit from the standpoint of the market hog alone.

In Louisiana, Alabama, and Georgia the average valuation of all members' pigs in the spring was $9.01, $5.50, and $11.26 per head, respectively, while the average valuation in December was $22.26, $17.14, and $43.60. The low valuations of the hogs in Alabama was due to the facts that about 80 per cent of them were meat hogs and that there were 21 litters of pigs included in the December valuation, which lowered the average. The valuation in December of the original pigs which started in the spring, along with their increase, was $27.28 per head. The high prices in Georgia were due to the fact that almost all of the pigs were registered. The average valuation of the Louisiana club members' hogs was $22.26, while the average valuation of the hogs of the State was $7.70.

## COMMUNITY BREEDING.

For years the community breeding of live stock has been urged upon farmers, but with very little success. Although its value and advantages have been preached to them repeatedly, it has been difficult indeed to get a large number of men to all agree to raise only one breed of stock.

The advantages of community breeding have been emphasized to the boys, and strenuous efforts made to have it started, with the result that in many counties one breed of hogs has been adopted as the standard of the county, and that breed is being raised almost exclusively. In Faulkner County, Ark., where the purchase of pigs was financed by banks for 75 boys, 97 per cent of them had registered hogs of one breed, while in Sebastian County, Ark., 90 per cent of the 91 boys had registered hogs of another breed. There are several parishes in Louisiana and several counties in Alabama, Georgia, and North Carolina where the boys of a county are specializing in one breed. In such counties the best and most successful pig-club work is being done, because the boys raising pure-bred hogs almost exclusively can obtain breeding stock at home for less money, can secure better breeding stock because they have a greater number from which to select, and can sell many more hogs for breeding purposes, as each of those counties is becoming recognized as a breeding center for a certain breed of hog, and with such a reputation come increased orders for breeding stock. This is one of the great achievements of the pig-club work, and a success is being made by the boys where their fathers have failed. This emphasizes to the boys the advantages of cooperation, and after the one experience, as boys, it will doubtless be much easier to get cooperation among the members after they become men than it has been with the grown folks of the present day.

In many counties the four-club idea is being advanced among the young folk, and this usually embraces the pig club. In all States the boys are encouraged to plant some forage crops for their pigs and furnish them permanent pasture. If the boy can plant three or four kinds of forage on small areas the results are better and he learns much about the growing of such crops. This emphasizes the diversification idea to the boy, and he learns one of the lessons of good farming that often has been difficult for mature farmers.

## EXHIBITS AT COUNTY AND STATE FAIRS.

The pig-club exhibits at the county fairs and the State fairs have been very valuable to the members from an educational standpoint. While the pig club was organized primarily for the benefit of the boys, the girls have not been excluded; good pig raisers some of them are, too, and it is not uncommon to see the prize awarded to a girl. This has been done repeatedly at the county fairs; Alice McCoy captured the prize at the Louisiana State Fair in 1914. In all three of the State fairs in North Carolina in 1915 a Tamworth pig belonging to Rachel Spees was the sweepstakes champion in the pig-club classes and won first prize in the open classes at every fair. In 1915, at the Georgia-Florida Fair, held at Valdosta, Ga., the pig-judging contest was won by a girl who was a pig-club member. When the small number of girl members is considered it is a question if they have not made as good or a somewhat better record than the boys. Often a girl will care for her pig better and more regularly and submit a better report than her boy competitor.

Previous to fair time lectures usually are given the members on fitting pigs for show. They are instructed how best to feed them during the last few weeks previous to showing, how to enter their pigs at the fair, how to trim their pigs' toes, trim out their ears, and scrub, brush, and oil them preparatory to entering the ring, and how to handle the pigs in the show ring. The members get experience at the county fairs and as a result usually have a very high-class exhibit at the State fairs.

Judging contests often are held for the members at the county and State fairs, and suitable prizes are given the winners. The boys who are showing pigs of their own soon become proficient in determining why their pigs win or lose in a contest. They learn much more quickly than the boy who neither owns nor shows a pig, because there is more at stake and the incentive to learn is greater.

In 1914 there were 185 hogs exhibited by pig-club members at the Louisiana State Fair. These hogs were judged and awarded prizes in the boys' pig-club classes, and those boys who conformed to the rules of the fair association were permitted to show their pigs in the open classes against the breeders' hogs from various States. Several prizes were won by the boys' pigs in such competition. After the fair some of the breeders asked the fair association to bar the boys from showing their pigs in the open classes during the following year. This request was immediately declined by the fair association. The fact that such a request was made was one of the greatest compliments that could be paid to pig-club work.

The largest exhibit of pig-club pigs ever made was at the Louisiana State Fair in 1915. There were 205 pigs shown by the members, and good ones they were, too. The competition was closer than ever before, as practically all of them were registered hogs, and they were in prime condition, showing that much care had been taken in fitting them for the fair. One of the outstanding features of the show was a Duroc sow and a litter of 9 pigs farrowed March 31, which were shown by John Robert Reid. The sow and every pig were good ones. In the pig-club classes he won the following prizes on his exhibit:

| | |
|---|---|
| Best Duroc litter | $25 |
| Best litter, any breed | 20 |
| First and second junior sow pig | 13 |
| First and second junior boar pig | 13 |
| Best Duroc sow | 8 |
| Sweepstakes sow and boar | 40 |

In the open class against the breeders from various States he won second prize on Duroc sow with a premium of $3, making a total of $122 won at the State fair. He was offered $400 for the sow and litter, which he refused, and afterwards sold three of the boars and one gilt for $260. He values his sow and five gilts at $600. He submits the following statement of his year's work:

| | | |
|---|---|---|
| To value of sow and litter May 1, 1915 | | $200.00 |
| To feed consumed to Nov. 1, corn, shorts, oats, and milk | | 100.00 |
| To clover pasture for pigs | | 7.50 |
| To labor | | 27.38 |
| | | 334.88 |
| By premiums won at fair | $122.00 | |
| By sale of 4 pigs | 260.00 | |
| By value of sow and 5 gilts on hand | 600 00 | |
| | | 982.00 |
| Net profit on work | | 647.12 |

It is possible that the boy has overvalued the gilts on hand at the present time, but if they were worth but half of the price named, it remains that he has made a phenomenal record. Such a record is rare, it is true, and perhaps does not illustrate the real value of the pig-club work; but it serves as an example of what can be accomplished. The real measure of success may be more nearly approached by stating that each year at the State fairs there are many pigs raised by the club members that change owners at prices varying from $30 to $75 a head.

At the 1915 Kentucky State Fair 18 boys showed their pigs. Gordon Nelson, jr., with his Poland China sow, won, in the pig-club classes, first for Poland China sow over 6 and under 12 months, and first on best sow in the exhibit, and won first in the open class. The sow also won first on the largest and most economical gains, having gained 192 pounds in 120 days. The barrows shown by the boys at the same fair sold for 25 cents a hundred pounds above the top of the Louisville market for that day.

At the Oklahoma State Fair there was one pig shown from each of 27 counties. This show was for market or fat hogs only. The pigs averaged 344 pounds at 10 months of age, and sold for 35 cents a hundred pounds above the top of the Oklahoma City market that day. They were bought by the two large packing houses located at that place. The buyers for these companies in judging the hogs declared that 11 of the 27 were of the perfect market type and but one hog of the entire lot scored below 90. Of the 27 hogs, 24 were barrows and were slaughtered, dressing out 84 per cent unchilled carcasses. The three sows were retained for breeding purposes, one of them afterwards being sold for $80.

The contest in Oklahoma was limited to one pig from each county, otherwise there would have been a much larger exhibit. This restriction will be removed in the future. The champion barrow of the show was a Duroc, 11 months old, weighing 440 pounds. He had the run of an alfalfa field for the first 116 days, and was then put in the dry lot and fed heavily for 4 months. At the show his total cost, including original cost, feeds charged at market prices, labor, etc., was $26.40, or 6 cents a pound. As he sold for 8 cents a pound, he made a net profit of $8.80, besides the prizes won. A litter mate of this pig was raised by a brother and ran a close race, weighing but 20 pounds less at the fair. The average cost of gains made by all the hogs was 5.7 cents a pound, which is very good when the fact is considered that this was a fat-hog contest and but little pasture or forage crops were used.

In North Carolina there are three State fairs, and at each of them was an exhibit of club members' hogs. These attracted a great deal of attention, as this was the first year such exhibits had been made at the fairs. The outstanding feature of the three fairs was a Tamworth gilt shown by a girl member of the pig clubs. This gilt was good enough to be the sweepstakes winner over all breeds in the pig-club classes at all fairs, and first in the open class at each of the three fairs. She will be kept for breeding purposes.

In Massachusetts, Indiana, and Nebraska pig-club contests were held in 1915 for the first time and met with good success. In the other Northern States previously mentioned the work has not been in progress long enough to have a contest, but excellent work is promised for the next year.

## THE HOME CURING OF PORK.

In Georgia the ham and bacon club is a feature of the pig-club work where market hogs are raised. The members are instructed in the slaughter and home curing of meats, and accurate records are kept on the meat cured from each hog slaughtered. This work has interested the farmers to such an extent that many of them are slaughtering and curing their meat according to the instructions furnished to the pig-club members. Several of them have been induced to build a simple and cheap meat-curing house after plans furnished by the department, and to keep a record of the meat cured. Such a house costs about $100 and can be used in curing 20,000 pounds or more of meat at a very small cost and without any loss, if instructions are followed. The greatest drawback to producing meat for home consumption in the extreme south is the difficulty of getting the carcasses thoroughly cooled after slaughtering and the heavy losses often resulting from a sudden rise in the temperature. The use of such a meat-curing house as mentioned, or of the chilling rooms furnished at some of the ice-manufacturing plants in the South, completely eliminates such danger. In 11 counties in Georgia where systematic pig-club work was conducted, and the home curing of meats especially urged upon the farmers, there were 11,000,000 pounds of meat cured during the winter of 1914–15, and this meat was produced and cured at a good profit.

## CAREERS OF THE PIG-CLUB MEMBERS.

Many of the pig-club members of former years are beginning a career as swine breeders, and a large percentage of the swine breeders of the future will doubtless come from the pig-club ranks. Two brothers in Louisiana who were successful pig-club members have engaged in the business of swine breeding and are distributing an attractive business card giving information about their herd.

A number of the pig-club boys of 1910 to 1913 have entered agricultural colleges, and many of them are paying part of their expenses with money earned while members of the club. One of the most encouraging facts revealed in pig-club work is that a large percentage of the boys join the clubs year after year and remain members until they enter college or it is necessary for them to quit for other reasons. An improvement in the pigs they show is seen each year, bearing out the idea that the club work is increasingly instructive year after year. Many times these older boys are made community leaders in the clubs. They are selected also for accompanying the cars of pigs to the State fairs, and have proved efficient in such responsible duties.

Little Jack Starr, of Midland, Tex., wanted to join the pig club, and purchased a pure-bred pig, the runt of the litter. The pig was 10 weeks old and weighed 29 pounds. When Jack tried to join the club he learned that as he was only 6 years old he was too young to be a member. Not discouraged, however, he fed his pig, according to instructions furnished, a properly balanced grain ration and let her graze Johnson grass, weeds, and volunteer oats for green feed. The few lice on her were quickly removed with an application of grease and kerosene thoroughly mixed, and they were kept off. A mineral mixture of charcoal, wood ashes, salt, and copperas was always kept before her. When the fair took place the pig, not quite 11 months old, weighed 450 pounds. Not being eligible to the pig club on account of his age, Jack entered her in five other classes, getting five blue ribbons and $25 in cash. With the money the pig won he purchased clothes, presents for his brothers and sister, and started a bank account. In November, 1915, nine pigs were farrowed by Jack's Perfection. Five have already been sold for future delivery at $12.50 each, and Jack is telling everyone he intends to be a stock farmer. Plate XX, figure 1, shows Jack with his pig.

The devotion of the boys to their pigs is shown by the act of one little boy, who, when his pig was awarded the prize, immediately broke into the ring and, oblivious of the crowd, hugged and kissed his pig; and by the letters from others whose pigs have died.

All of the pig-club work is not like a bed of roses, however; there are some thorns. Hog cholera causes a few losses; a train killed one pig, lightning another, and so on. Some of the letters are pathetic. One of the boys wrote: "You can mark out my name. I can't join the pig club. I ain't got no money to start with and no feed and no pig. I am in a bad fix for starting and I will have to give it up." A girl member writes: "I was interested in the pig-club work when I joined and was intending to do my very best, but I am mighty sorry that I will have to give it all up. My mother has gone to rest and left seven little children—the youngest 2 years—and they are all in my charge. You may know what a handful I have."

So letters come in to the pig-club agents, hundreds and thousands of them, some telling of the hopes of the future, some bubbling over with pride of achievements just attained either by the writer or the pig, and sometimes others written with many tears explaining that the pig—the one pig of pigs—had died and the writer was heartbroken and could not finish the report. Thus the pig-club agent is made the confidential friend to whom success or failure may be told, feeling that from him there will come consolation and, best of all, inspiration and encouragement for future efforts. The agent is a man with a big family, and to the pig-club members is the one person who knows just about all that can be known about swine; is adviser, teacher, confidant, judge, and jury of all that is good or bad in the boy's pig-club work.

## SUMMARY OF ADVANTAGES.

The pig-club work may be said to exert a beneficial influence over the boy in the following ways:

(1) It gives the boy something to do at home that furnishes him pleasure, is of educational and financial benefit, and keeps him occupied at times when he might be in mischief or loitering in undesirable places.

(2) It develops the love of animals which is inherent in all boys, and impresses upon them the necessity of regularity in habits and prompt attention to details in the feeding and handling of live stock. Promptness and regularity in these matters will tend toward the same in other things.

(3) He learns valuable lessons in the feeding and breeding of animals, sanitation, the home curing of meats, and the business side of farm life. From these boys will develop many of the swine breeders of the future.

(4) He becomes thoroughly acquainted with some of the work of the Federal Department of Agriculture and the State agricultural college.

(5) From the work he learns how he can find information which he wants through the Federal or State bulletins, various textbooks, and agricultural journals, thus giving him a broad foundation for future study.

(6) It often stimulates a desire to attend the agricultural college or to make a closer study of farming operations.

(7) It aids the boy in an educational manner, especially in English, spelling, composition, and report writing.

(8) It enables the boy to make some money, which is usually invested in more stock, or goes toward getting a more liberal education.

(9) It is one of the principal means of interesting the boys and girls in farm life, with the result of developing better farmers, better homes and home living, and establishing a better rural citizenship.

# A SUCCESSFUL RURAL COOPERATIVE LAUNDRY.

By C. H. Hanson, *States Relations Service.*

THE present organization of the rural community, when considered in relation to the farm woman, is far from satisfactory. The necessity of relieving the farm woman of some of her burdens and of shortening her hours of labor is too apparent to need demonstration. The remedy for this situation is not a simple one, nor is there a single solution for the problem, but Chatfield, Minn., has realized the importance of woman's place upon the farm and is making a long stride toward solving the problem by the successful operation of its rural cooperative laundry.

About 12 years ago the butter maker of the local cooperative creamery equipped a discarded churn for the washing of his laundry. The secretary of the company saw this equipment and conceived the idea of operating a rural laundry in conjunction with the creamery. Fortunately the stockholders of the creamery company, acting on the advice of the board of directors, were annually passing their dividends for renewals and improvements. In the spring of 1912, when public opinion began to crystallize in favor of the laundry, a meeting of the board of directors was called and it was decided to use $2,000 of these deferred dividends for the purpose of building an addition to the creamery, to be used as a laundry, provided that a corporation could be organized to whom the building could be rented. The presence of this surplus, $2,000, in the treasury, a prosperous and well-managed creamery, a strong and active farmers' club, combined with a favorable public sentiment in both country and town, made it possible for the secretary and his few coworkers to realize their dreams.

## FARMERS' CLUB AIDS MOVEMENT.

A meeting of the Farmers' Club was called April 5, 1912, to discuss the subject of cooperation. It was at this meeting that the cooperative laundry idea first took definite form. To bring it before the public and enlist the good will of both town and country folk on so new and untried a venture, the club invited the entire community to a well-planned basket picnic to be held June 5. Amusements and lunch preceded a program which was largely devoted to an explanation of the laundry project. A vote was taken, the women voting as well as the men, to determine the sentiment of the community on the establishment of such a laundry, and the vote was so overwhelmingly in favor of the proposition that the Farmers' Club promptly called a meeting to promote the enterprise. The appointment of a committee to study other laundries, the perfecting of an organization, the securing of purchasers of stock, incorporation, and the erection and equipment of the plant followed in such rapid succession that the laundry was open for inspection November 30 and began operations December 2, a record of which any community might well be proud.

The organization of the laundry corporation is unique in that, although a separate corporation, the laundry and the creamery have the same officers. The object of this arrangement is to prevent friction between the officers of the two corporations, and, by making it a separate organization, to enlist the support and patronage of the town people, who are not stockholders in the creamery company, but who hold about 30 per cent of the capital stock of the laundry company. The creamery company owns the building, which it rents to the laundry company at $10 per month, a rental equivalent to 6 per cent on the investment, and supplies it with power and heat at the rate of about $15 per month.

The company is organized under the cooperative laws of the State and has been capitalized at $5,000. Shares sold for $5 each, but each of the 224 stockholders has but one vote, regardless of the number of shares he holds. Desiring to make the enterprise as purely cooperative as possible, the company, after paying 6 per cent dividends on all stock, refunds a portion of the remainder of the surplus in the form of a 10 per cent rebate to the patrons in proportion to the amount of business done with the laundry.

## BUILDING AND EQUIPMENT.

The building (Pl. XXV, fig. 1) which is an addition to the creamery, is a well-built structure, 30 by 70 feet, costing about $2,000. Between and joining the two buildings are the boiler, engine, and coal rooms. This arrangement is convenient for the operators of both plants, reduces overhead expenses, prevents contamination of cream and butter from the laundry, and is economical of heat and power. A portion of the second story has been finished off for a lunch and rest room for the employees.

The equipment is of the most modern type. It consists of the following: 1 one-apartment wooden washer, 2 three-apartment wooden washers, 1 extractor, a soap cooker, a starch cooker, 1 five-roll mangle, 2 compartment dry rooms, a machine for ironing white shirts and collars, 1 dip wheel starcher, 1 neck-band ironer, 1 collar shaper, hand irons, ironing boards, trucks, baskets, and a standard scale. (Pl. XXV, figs. 2 and 3.)

The washers are of very simple internal construction. Rounded strips of wood extend the entire length of the interior. These projecting strips carry the clothes toward the top of the washer, where by their own weight they fall back into the suds below, an operation which insures cleanliness with the least possible amount of wear. Instead of boiling the clothes, each washing is subjected to steam under pressure. This is one of the very best methods of destroying disease germs, and for this reason, if for no other, the steam laundry should be a favorite with all who wish sanitary washing.

The extractor or "wringer" is another saver of clothes. The clothes, instead of being passed between two rubber rollers, are put into a large kettle-shaped, perforated copper bowl which rotates at a speed of 1,600 revolutions per minute, and thus throws out the water by centrifugal force. From the extractor the flat work goes to the mangle to be ironed and all other clothes go to the dry room. Only the purest of soap without any chemicals whatever is used in the process of washing.

This equipment, which cost about $3,000, is similar to that used in good city laundries and is sufficient to turn out $400 worth of work per week.

## CHARGES.

The charges based on weight are 5 cents per pound, which includes the ironing of all flat work, underwear, and stockings. An extra charge, based on the time required by an expert hand-ironer, is made for the ironing of all articles which can not be ironed in the mangle. About one-half of the patrons have this ironing done at the laundry. The average cost per week for the family washing has been $1.05. Patronage is about equally divided between city and country.

## MANAGEMENT.

The laundry usually employs about 8 persons: a superintendent who receives $25 per week, a forelady who receives 20 cents per hour, and 6 girls who receive 15 cents per hour. The employees of the laundry are directly responsible to the manager, who is the secretary of the laundry company and of the creamery board of directors. The work, however, is in the direct charge of the superintendent, an experienced laundryman.

The farmers bring their laundry when they bring their cream and get it on the following trip. The collecting and delivering of laundry within the city limits is done by a local drayman. In lieu thereof, the farmers get a 10 per cent rebate based on the actual amount of patronage. All city laundry is delivered C. O. D., while the creamery patrons have their laundry bills deducted from their monthly cream checks.

## LAUNDRY IS A SUCCESS.

That the Chatfield Cooperative Laundry has proven to be a business success is evident from the following extracts from the company's financial statements:

*Financial statement.*

| | First month, December, 1912. | Jan. 1, 1913, to Jan. 1, 1914. | Jan. 1, 1914, to Jan. 1, 1915. |
|---|---|---|---|
| Total receipts | $337.95 | $5,065.05 | $5,856.02 |
| Wages | 262.23 | 3,845.54 | 4,589.88 |
| Dividend | 12.00 | 150.00 | 150.00 |
| Rebate | 33.80 | 506.50 | 585.60 |
| Running expenses | 29.92 | 563.01 | 580.54 |

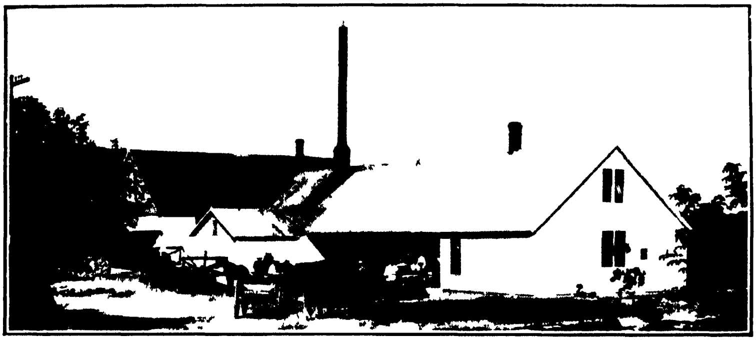


FIG. 1.—A BUSY DAY AT THE LAUNDRY

FIG. 2.—GENERAL VIEW OF THE INTERIOR

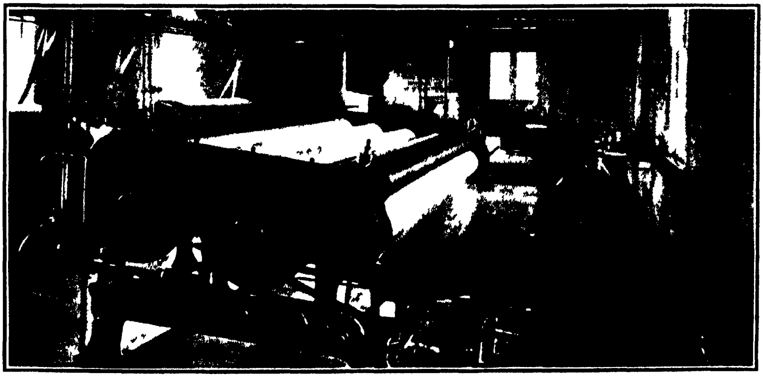


FIG. 3.—THE MANGLE.

That the laundry is rendering good service to the community and meeting the expectations of its founders is indicated by the following extracts from statements by patrons and stockholders:

> The Chatfield Laundry continues to be an entire success and I have no hesitancy in recommending it to other similar communities. The laundry here has been successful in relieving the hard life of a farmer's wife, and in addition has been not only self-sustaining but a profitable institution. The stockholders get their little dividend checks every year, and besides that the patrons get their 10 per cent rebate from the regular laundry prices which they pay. The unique feature of the thing is of course its connection with the creamery, and it was largely on that account that it was a paying institution from the start. Carrying the cream and washings together and using the same steam plant in the building are both cooperative features that work to its advantage. The fact that laundry bills are deducted from cream accounts makes the matter of collections a safe proposition.

> The Chatfield Laundry is giving the best satisfaction in every respect. It has the patronage of the entire community. The work is first class in every respect. I think the laundry is the greatest boon that ever came to the housewives of Chatfield and vicinity.

> I certainly think it is fine. As I have 10 in the family to wash for, it helps me a great deal. On Monday we send the laundry with the cream man. On Wednesday the clothes come home as fine as silk. It is a great benefit to the farmers' wives.

> The Chatfield Laundry is a great success and a wonderful help to the farmers' wives. The clothes come home fresh and clean and a great burden is lifted from the home work.

> The cooperative laundry is one of the greatest helps to the farmers' wives. The work is done very satisfactorily at a small cost. With washing and ironing done away from home, the mother has more time to devote to the many other duties.

> After a trial of nearly three years I am well satisfied. It has lightened the work in the home to such an extent that one can manage the work without keeping help, which is very scarce and high priced, when it would be impossible to do so if the washing was included with our other duties. I do not think the clothes wear out any faster than when laundered at home. The thinnest of little dresses and waists I send come back all right, and no matter how soiled the men's work shirts, overalls, and such like are, they come home clean.

I have patronized the laundry for three years and find the work as satisfactory as it can be done away from home. The clothes come home clean and the flat ironing is excellently done. I send my bed quilts, comforts, lace and scrim curtains, and they are just like new after they are washed at the laundry and look much better than when done at home.

In the conservation of mothers on the farm, rural cooperative laundries rank first, in my opinion. Having had 25 years' experience as a farmer's wife, I can say that I have taken more comfort the past 3 years than ever before because of having dispensed with the washing and ironing. This change gives me two days of recreation that I can call my own every week and also gives me more time in which to accomplish the household duties. I have never had cause for complaint, as all articles come back in good condition and I see no reason why the work is not as satisfactory as that done at home, if not better, as it leaves no backache or tired muscles in its wake. I am sorry all women can not see the advantages such an enterprise has in the community and all patronize it. Some send part of their clothes, and others none, cherishing the foolish idea that they are economizing. Strength and health, two priceless gifts which go a long way toward making home happy, are sometimes sacrificed. The men on farms have sane ideas about the laundry as a labor saver, and are proud of the fact that by milking a few extra cows to compensate for the extra outlay, they are doing their share to help lighten the housework. The rural laundry, like other good things, is jostled in its infancy, but is too good to drop, and will continue to prosper as well as the creameries and cheese factories of this time. When this comes to pass there will be no need for sympathy for the poor farmer's wife, and instead of pity, she will become the envy of her city sisters.

I don't know how I could get along without the laundry, and am sure that all the patrons of it would feel the same. I can not say too much in its praise.

# THE POULTRY CLUB WORK IN THE SOUTH.

By ROB R. SLOCUM, *Scientific Assistant in Poultry Investigations, Animal Husbandry Division, Bureau of Animal Industry.*

GIRLS' and boys' poultry clubs have become an important part of the agricultural-club movement. Through these clubs the farm children are being trained in good methods in a useful and attractive industry and aided to earn money, and indirectly the work is bringing about improvement in a branch of agriculture that is probably more widely practiced than any other.

The girls' and boys' poultry club work was originally started in Virginia in November, 1912, as a cooperative project between the United States Department of Agriculture and the Virginia Agricultural and Mechanical College and Polytechnic Institute. During the first year the work, of necessity largely an experiment, was developed in certain localities where the conditions appeared suitable and was coupled closely with the work of the canning-club demonstrators. The results at the end of the first year were so satisfactory that the work has been continued along the same lines in Virginia and extended to the States of North Carolina, South Carolina, Georgia, Kentucky, and Tennessee.

## OBJECTS AND METHODS.

The primary object of the poultry clubs is to improve the farm poultry and to place the poultry industry of the South upon a more profitable and practical basis. While the greater part of the direct effort is given to the girl and boy members of the clubs, these children have proved to be the means of interesting their parents, and have served as entering wedges for the introduction of better methods of poultry keeping and of improving stock in general. Stress has been laid upon the necessity of keeping the advice and methods as simple and practical as possible, while the local conditions and the recommendation of only such steps in improvement as could be accomplished without the expenditure of much money by the members have been kept constantly in mind.

A poultry-club agent, appointed for each State and working through the canning-club demonstrators, county agents, and school teachers, begins his work by visiting the schools in which clubs are to be organized. He talks to the pupils about poultry and about the idea of forming a club and asks the children to indicate whether they wish to become members. Each child who expresses his desire to join is enrolled as a member and is supplied with a set of the poultry bulletins of the United States Department of Agriculture, in addition to a set of five report blanks upon which he is instructed to keep a detailed account of his poultry work. When properly filled out at the end of the season these reports are sent to the poultry-club agent and show a complete record of the accomplishment of the members. This not only gives the county or State agents a guide as to how the members may best be advised and benefited but also encourages the child to keep a systematic record enabling him to see just what he has done, the mistakes he has made, and in what particulars he can better his work during the coming year.

All members are encouraged to raise and keep pure-bred stock. Poultry breeders have cooperated by furnishing sittings of eggs from their stock at prices within the reach of the poultry-club members, and by so doing have indicated their faith in and approval of the work. The widespread introduction of pure-bred stock in this manner and at low cost is of great benefit.

In order to give the members of the poultry clubs an opportunity to show what they have been able to accomplish in raising improved poultry and in producing better eggs, they are urged to make poultry and egg exhibits at many of the local and State fairs. Special classes are offered for exhibits of poultry-club members, and many cash and special premiums are awarded. The quality of the stock shown has been excellent and has created much favorable comment. In some instances fowls raised and exhibited by poultry-club members have been of sufficiently high quality to win over the exhibits of older breeders.

## WORK OF THE POULTRY-CLUB AGENTS.

The poultry-club agent attempts to visit at intervals the homes of members, and to give them personal attention and advice. With the number of members enrolled, however, it is possible to reach a comparatively few homes. He is compelled, therefore, to depend upon the teachers and county agents for much of this work, and he quickly comes to realize that those who are interested and well informed in poultry give a great impetus to the work. He therefore endeavors to interest them in the work of the poultry clubs. This is accomplished by giving a series of lectures before the rural teachers' classes at the normal schools, and before the students of the county and agricultural high schools. Thus he succeeds in interesting many prospective teachers who may go into communities where poultry clubs exist, and who will in consequence have greater initiative in advancing the work.

While the State poultry-club agent works primarily with the children, he frequently finds opportunity to give aid to the farmers and poultrymen of his State; and wherever this can be done without seriously hampering his club work, it is especially encouraged. In connection with this phase of the work the agents have been of considerable service in encouraging the production of infertile eggs—doubtless the most practical method of effecting the improvement of market eggs, particularly in the South, during the summer months.

## COMMUNITY BREEDING.

In some of the counties where the work has been in progress longest, community poultry breeding has been established, and a single breed or variety is kept both by the club members and by their parents. Thus far the plan has met with favor and has proved practicable. The object is to encourage the community to devote its efforts to breeding and raising one variety. Thus each member is reenforced by being closely associated with many others breeding the same kind of fowl, while at the same time a center is established with a reputation of high quality in large quantities, whether it be market eggs and fowls, or breeding stock and eggs for hatching.

## SCHOOL POULTRY FLOCKS.

An interesting outgrowth of the club is the establishment of school poultry flocks. In several instances high schools and graded schools have established, in connection with their regular curriculum, a course in poultry husbandry, using Government bulletins as textbooks, and managing their fowls on the school grounds, so that the children may take an active part. If the school has a janitor, the care of the poultry becomes a regular part of his duties, the same as the care of the building. This system not only serves to create an interest in and knowledge of poultry among the children, but among the older people as well. It also provides an opportunity to demonstrate suitable poultry equipment for that particular community, and serves to a considerable degree as a distributing center for pure-bred eggs for hatching. The establishment of such school poultry flocks is distinctly to be recommended.

## GROWTH IN THREE YEARS.

An idea of the growth of the poultry-club work may be obtained from the following comparative figures for the first year (1913) and for the part year (1915). The growth is actually greater than shown, for the reason that the figures for 1915 are not complete.

*Comparative growth of poultry-club work, 1913 and 1915.*

| | 1913 | 1915 | Per cent increase. |
|---|---|---|---|
| States organized | 1 | 6 | 500 |
| Counties organized | 4 | 98 | 2,350 |
| Clubs organized | 11 | 326 | 2,863 |
| Members | 150 | 3,722 | 2,381 |
| Eggs set | 2,378 | [1] 11,860 | 398 |
| Eggs hatched | 1,696 | [1] 8,595 | 406 |
| Chicks raised | 1,201 | [1] 6,402 | 433 |
| Shows held | 3 | [2] 42 | 1,300 |
| Number of fowls shown | 132 | [2] 3,048 | 2,209 |
| Number of dozen eggs shown | 0 | [2] 155 | .......... |
| Number of members exhibiting | 50 | [2] 931 | 1,762 |
| Total value of awards | $218.50 | [2] $1,177.74 | 434 |

[1] Figures for 1914.

[2] Incomplete.

## SOME RESULTS.

In measuring results it is of interest to note the accomplishment and success of some of the club members. Those here given are taken from reports furnished by the poultry-club agents.

A girl member of Nottaway County, Va., starting with one or two sittings of eggs, in two years built up her poultry flock so that she had sold $75 worth of broilers, $3.15 worth of eggs for hatching, and $8.70 worth of eggs for the table. The money which she made in this way played an important part in enabling her to attend the county agricultural high school.

Two brothers, poultry-club members, are now breeders of pure-bred poultry. They have been successful in their venture, and advertise their stock both in local and in State papers. Last year the younger brother sold about $80 worth of market poultry and eggs, while the older brother sold a large number of breeding stock and eggs for hatching. As a result of the poultry-club work, both of these boys have been able to attend winter short courses at their State college.

Two sisters, encouraged by their mother, became interested in the poultry-club work. During the first year one of these girls built up a flock worth $124, while her sister's flock is worth $70. At the same time they have made enough money from their flocks to enable them to secure poultry equipment worth $175. These girls stated to the poultry-club agent that they expect thus to pay their way through normal school.

An interesting example of what a boy can accomplish is furnished by another Virginia member. In the face of discouragement by his parents, and working under the handicap of physical unfitness, this boy started in the poultry business with a pen of Barred Plymouth Rocks, consisting of a male and four females, which he won as a prize for an essay on poultry. From this start he has built up a large poultry flock which is well housed and cared for, and he has succeeded in demonstrating to his parents and to the community that poultry has a place on every farm and can be made a source of profit. Last year he was awarded a trip to Luray

Caverns as the result of his systematic, thorough work. The year before he had the honor of being the first and only poultry-club member to receive a diploma of excellence and proficiency from the Secretary of Agriculture and a week's trip to Washington. Last year this boy sold $78.50 worth of poultry products, making a specialty of selling eggs for hatching and breeding stock to new members of the poultry club and to farmers in his section.

One of the few members who have specialized on turkeys is a girl who started last year only in a small way. In this short time she has sold table turkeys amounting to $36, breeding stock valued at $4.50, and has a flock left valued at $44.

It is clear that the poultry-club work in the South is a success. It reaches the boys and girls of the farms and carries to them, and through them to the communities in which they live, a knowledge of better poultry and of better methods of care, feeding, and housing. The reports from members show that definite results are being obtained, and in addition a great deal of benefit is brought about both to members and to the older people which never finds its way into the reports. The work is receiving the support and commendation of the people among whom it is being carried on.

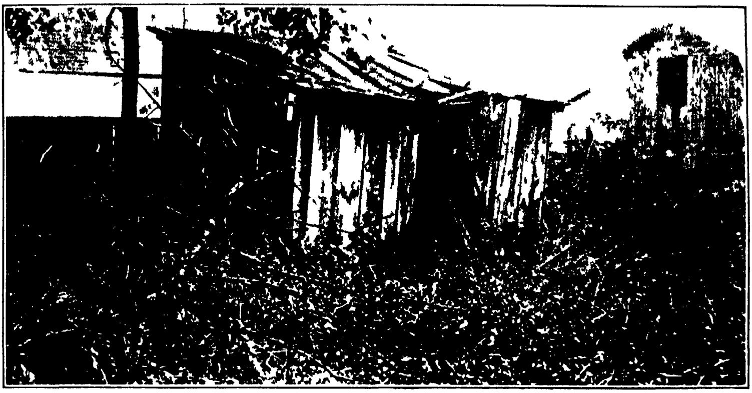


FIG 1.—POULTRY HOUSE AT BOY'S HOME BEFORE HE BECAME A MEMBER OF THE POULTRY CLUB.

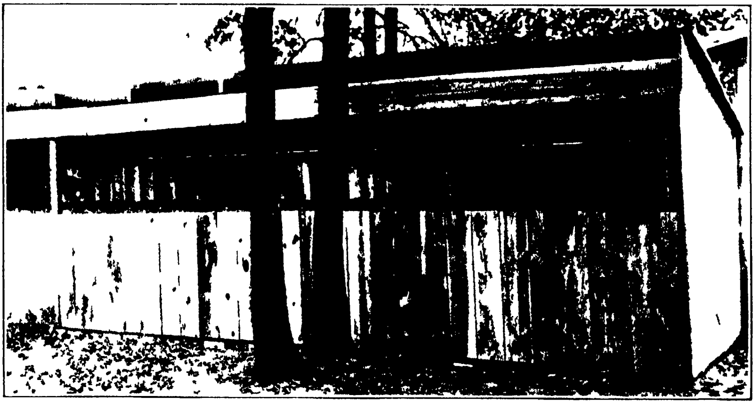


FIG. 2.—POULTRY HOUSE REBUILT AFTER HE JOINED THE POULTRY CLUB.

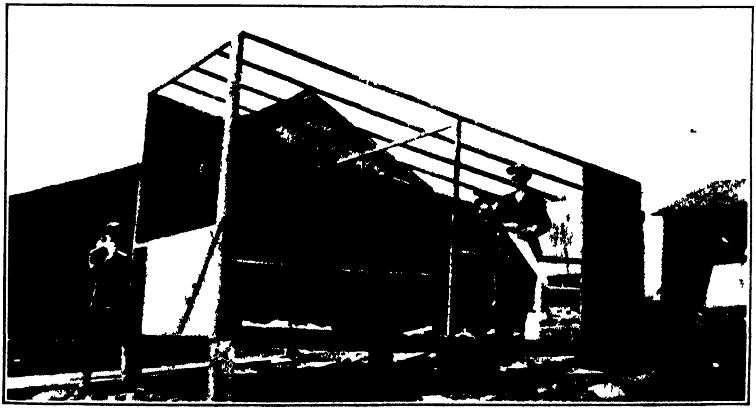


FIG. 3.—POULTRY-CLUB BOYS BUILDING A POULTRY HOUSE.

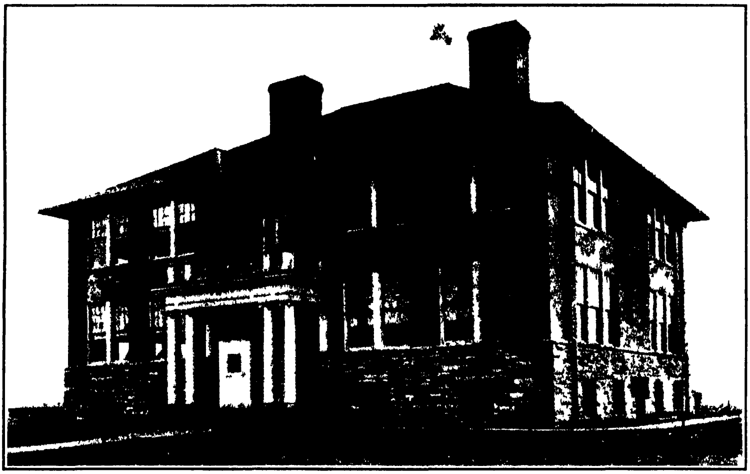


FIG. 1.—THE MIDDLETOWN (VA.) AGRICULTURAL HIGH SCHOOL.

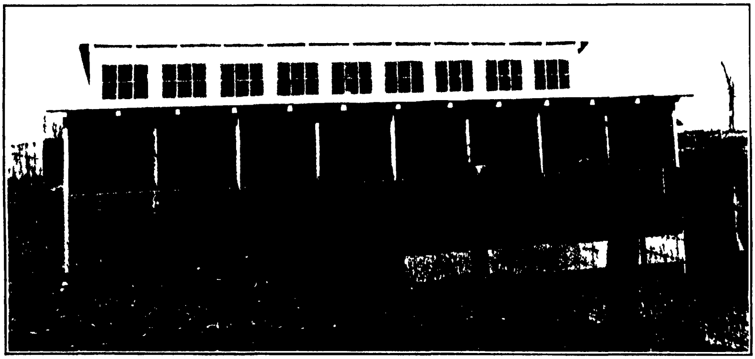


FIG. 2.—COMMUNITY POULTRY HOUSE, MIDDLETOWN (VA.) POULTRY CLUB.

FIG. 3.—PEN OF BARRED PLYMOUTH ROCKS USED BY THE MIDDLETOWN (VA.) POULTRY CLUB.

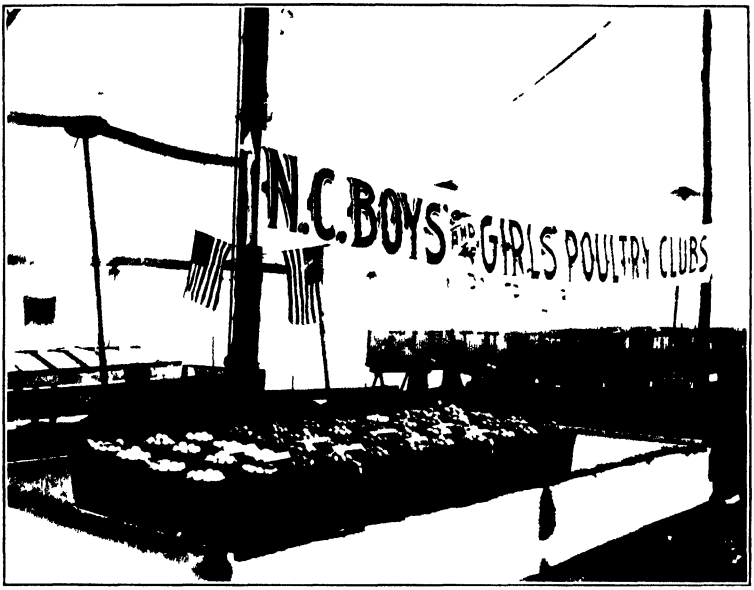


FIG. 1.—EGG EXHIBIT OF THE GIRLS' AND BOYS' POULTRY CLUB AT THE CHARLOTTE FAIR, CHARLOTTE, N. C.

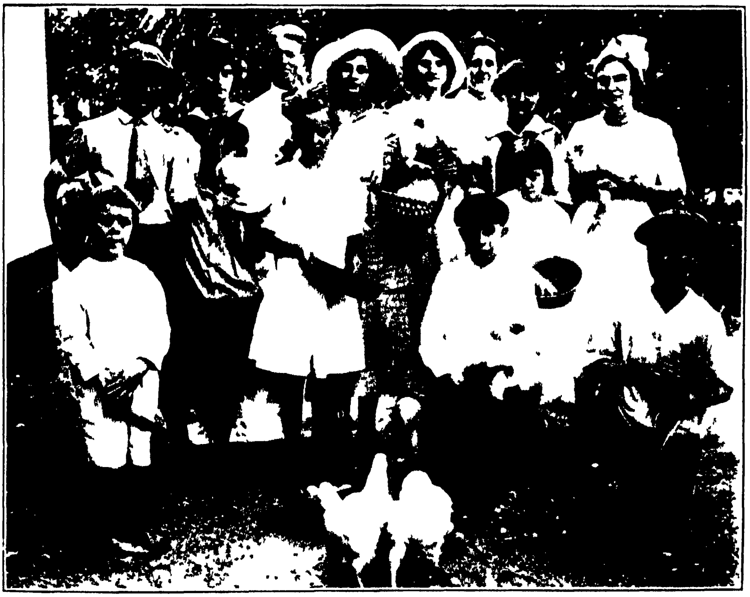


FIG. 2.—A TYPICAL POULTRY CLUB

# OSAGE ORANGE WASTE AS A SUBSTITUTE FOR FUSTIC DYEWOOD.

By F. W. KRESSMAN, *Chemist in Forest Products, Forest Service.*

## SUPPLY OF OSAGE ORANGE WOOD.

THE scarcity of aniline colors and the rise in the price of imported fustic give a special timeliness to experiments carried on during the past three years by the Forest Service to determine the value of osage orange as a dyewood. Osage orange grows naturally in southern Arkansas, Oklahoma, and Texas and has been extensively planted in the Middle West. It is a very strong and durable wood, valuable for many purposes, but chiefly used at present for wagon felloes and fence posts. Though utilized with exceptional care, a great deal of waste necessarily results from manufacture on account of the tree's small size and irregular shape. Inquiries by the Forest Service indicate that between 40,000 and 50,000 tons of Texas and Oklahoma osage orange are available annually. It was the existence of this large amount of waste material and the fact that osage-orange extract was once used by the Indians to dye their blankets and other fabrics which prompted the Forest Service to determine the chemical nature of the dyestuff present and to compare it with that obtained from tropical fustic, the dyewood which osage orange most nearly resembles.

The war in Europe is responsible for practically quadrupling the importation of fustic. From 1905 to 1913 imports of fustic ranged between 3,000 and 4,500 tons annually. In 1914 this jumped to 7,000 tons, and in 1915, though complete figures are not yet available, it probably reached 14,000 tons. On July 20, 1914, chipped fustic was quoted at $0.015 to $0.02 a pound. On December 8, 1915, quotations ranged from $0.05 to $0.07 a pound. Before the war solid fustic extract brought from $0.08 to $0.11 per pound; in December, 1915, quotations ranged from $0.025 up. One case is known of a large tannery in Milwaukee which, during the summer of 1915, paid more than $0.50 for 51° Tw. extract, which ordinarily is quoted at about three-fourths the cost of solid extract.

## CHEMICAL COMPOSITION.

A study of the extract obtained by leaching the ground wood or shavings of osage orange with water showed the dyeing principles present to be morin or moric acid, and morintannic acid or maclurin, the same as those in fustic, and a very small amount of a third, unknown red constituent. This red constituent is found in relatively large amounts in fustic from some localities, for example Mexico, and in comparatively small amounts in material grown in Jamaica and South America. Its practical absence from osage orange, however, is an advantage rather than a defect, since any considerable quantity of it tends to reduce the purity of the shades obtained and to give them a muddy or murky appearance.

## DYEING VALUE.

Samples of osage-orange wood in the form of shavings and sawdust were submitted to the Lowell Textile School, the New Bedford Textile School, the North Carolina College of Agriculture and Mechanical Arts, and the Georgia School of Technology for comparison with fustic in dyeing wool.

The summary of reports from these institutions showed that the character of the dyeing produced by osage orange is almost identical with that of fustic, each being a polygenetic mordant dyestuff. Osage orange can be used advantageously for self-shades, also in conjunction with logwood and other mordant dyes and with alizarine. With a tin mordant it gives a comparatively bright yellow; with an aluminum mordant, a somewhat greener and duller shade of yellow; with a chromium mordant, a series of tans and old-gold shades; and with iron and copper mordants, dark browns, chocolate, and olive shades.

Opinions differed as to the depth of the colors produced. Some believed that the osage orange gave a deeper color than did fustic; others considered osage orange to have a tinctorial value only 75 or 80 per cent of that of fustic. The difference was apparently due to differences in the fustic used for comparison. It is generally held in the trade that Mexican (also called Vera Cruz or Tehuantepec) fustic is better than either the Jamaica or Maracaibo (Venezuela).

All opinions concurred that the aluminum and tin mordanted colors produced by osage orange (and by fustic also) are too fugitive to be of commercial value. The chromium, copper, and iron mordanted colors, however, are all reported as of commercial value, the chromium color being especially resistant to light and washing. No difference could be noted between the osage-orange and fustic colors in any of the fastness tests.

Opinions differed as to the amount of water-soluble extract obtainable from osage orange. This was probably due to the different methods of extraction used. Results obtained in this connection by the Forest Products Laboratory are as follows:

| Dyewood. | Moisture. | Water-soluble extract, dry basis. |
|---|---|---|
| | *Per cent.* | *Per cent.* |
| Texas osage orange | 10.90 | 14.90 |
| Tehuantepec fustic | 7.60 | 17.77 |

The following results of an analysis of the wood at a commercial laboratory bears out the results obtained by the Forest Products Laboratory in regard to the percentage of water-soluble extract, and in addition shows that the wood contains large amounts of tannin:

| | Per cent. | | Per cent. |
|---|---|---|---|
| Moisture | 9.30 | Insoluble solids | 1.10 |
| Total solids | 14.86 | Nontannin | 3.31 |
| Soluble solids | 13.76 | Tannin | 10.45 |

Just how much tannin the material actually contains, as distinguished from dyeing principles, is impossible to say, since the two are so closely allied chemically. The material will tan and dye at the same time. Fustic acts similarly and is extensively used for retanning or "after-tanning" chrome (mineral) tanned leather, especially when it is later to be dyed some tan shade with basic aniline colors. The vegetable tannin color acts as a mordant for the aniline color and gives a good bottom tan color over the blue of the chrome, thus reducing the amount of aniline dye necessary.

## OSAGE ORANGE FOR DYEING LEATHER.

In view of the striking similarity of results obtained by dyeing wool with osage orange and fustic, it is reasonable to expect that osage orange should be as valuable as fustic for dyeing leather. In fact, preliminary tests indicate that this is the case. Experiments made at a large tannery in Milwaukee on chrome-tanned calfskins show that here, too, osage orange gives the same shades and depth of color as fustic.

## OSAGE ORANGE FOR COTTON.

Experiments are at present under way to determine the value of osage orange as a cotton dye. Ordinarily a dyestuff like osage orange would not be considered as suitable for cotton. The war, however, has deprived this country of its chief source of aniline colors. It is quite possible that for colored twines, cords, and similar materials where fastness and permanence are not essential, good shades may be developed that will fill the void left by the present shortage of aniline dyes.

## COMMERCIAL POSSIBILITIES OF OSAGE ORANGE.

The greatest hindrance to the commercial use of osage orange has been the high freight rates from the point of production to the North Atlantic seaboard. The center of production is several hundred miles inland, and the rail freight to a port like Galveston is practically as great as the total cost of transporting fustic from the interior of Mexico to New York or Philadelphia. Several concerns interested in the development of osage orange, however, are surveying the ground in the Southwest with the idea of erecting extract plants there. Should such a plan prove feasible, a long step will be taken toward the commercial exploitation of osage-orange dyes.

Since the yield from osage orange is about 80 or 85 per cent of that from fustic, the cost of operating an osage-orange plant will, of course, be somewhat greater than that for a fustic plant of the same capacity. This must be taken into account in comparing the two raw materials as a source of dye. Because osage orange is not at present on the market, it is difficult to give exact figures of cost. One concern in the East, however, states that, as compared with fustic, for which they paid $25 a ton in the spring of 1915, osage orange would be worth $14 a ton. As far as the actual cost of the two woods is concerned, osage orange has a distinct advantage over fustic. Quotations secured by the Forest Products Laboratory from osage-orange producers in the Southwest for culled fence posts and other forms of waste, not bark, averaged $5 a ton. With an extract plant in its region of production there will probably be a considerable margin in favor of osage orange even in normal times.

# CHINA A FRUITFUL FIELD FOR PLANT EXPLORATION.

(Plates XXIX to XXXVI.)

By FRANK N. MEYER, *Agricultural Explorer, Office of Foreign Seed and Plant Introduction, Bureau of Plant Industry.*

HAD a race like the Chinese been living on the North American continent for forty centuries it is very likely that they would have evolved out of our native wild species of fruits varieties of great merit. Since the continent has not been occupied by an indigenous race of people which took pains to develop such native species as our American plums. hawthorns, persimmons, hickories, and numerous others, many of our plants have been neglected.

The Caucasian races appeared late on American soil and they had already developed so many types of their own which they brought with them that they naturally did not pay much attention to the strictly native American plants. However, many plants which came from western and southern Europe were not entirely successful on American soil, some even proving to be almost complete failures, such as certain European varieties of gooseberries, currants, raspberries, and strawberries. When the immigrants settled the western portion of the country it became especially apparent that many of these European cultivated varieties of fruits and vegetables were unsuited to the climatic and soil conditions prevailing there. This was because the climate of Europe was much more equable, more like the northern Pacific coast region than that of the Middle West. When we turn to other countries, particularly toward Asia, we find that in China, especially, climatic and soil conditions are in the main very similar to those in the United States; in fact, China's wild vegetation in some parts resembles that of the eastern United States to such an extent that a person suddenly transported from either region to the other would not always exactly realize where he was.

Fortunately, China has been settled for some forty centuries or longer and her industrious peoples have developed from their native vegetation many improved varieties and types which are admirably suited to their local conditions. The climatic conditions in many parts of China being similar to those in certain parts of the United States, we need not hesitate about predicting the success of certain Chinese plant industries when they have been transplanted to this country, aside, of course, from certain economic conditions which are entirely different in China from what they are in North America.

Certain plants from China, indeed, have already become established in this country. Is it not a fact that the peach industry of Georgia has been built up on a variety which has a Chinese hybrid origin? Do not the Kieffer, LeConte, and Garber pears owe their success to their Chinese ancestry? Have not some Chinese trees like the *Ginkgo biloba*, the tree of heaven (*Ailanthus cacodendron*), the pride of India (*Melia azedarach*), and the camphor tree (*Cinnamomum camphora*) proved eminently successful in many parts of the United States? Are not our porches adorned by *Wistaria chinensis*, our hybrid roses being hybridized with the Wichuriana rose, and our parks embellished with countless Chinese flowering shrubs, like tree peonies, abelias, golden bells, and mock oranges?

The Department of Agriculture, having long been in possession of facts regarding the existence of important and promising plant industries in China, decided to have a thorough investigation made as to the possibility of successfully introducing these industries into this country. It was my good fortune to have been selected to do this work. I have made three successive trips into China and in all spent about 6 years in that immense country, covering mainly, however, northern and eastern China and the neighboring regions of northern Chosen (Korea), eastern as well as western and central Siberia and Mongolia, and Russian Turkestan. I did not visit southern China nor the upper Yangtse Valley regions. Six years may seem to be a long time, but in a country so vast as China and where the means of communication are so primitive that on the average one can travel only 20 miles a day, after all one can not cover very much territory in that time. (See fig. 4.)

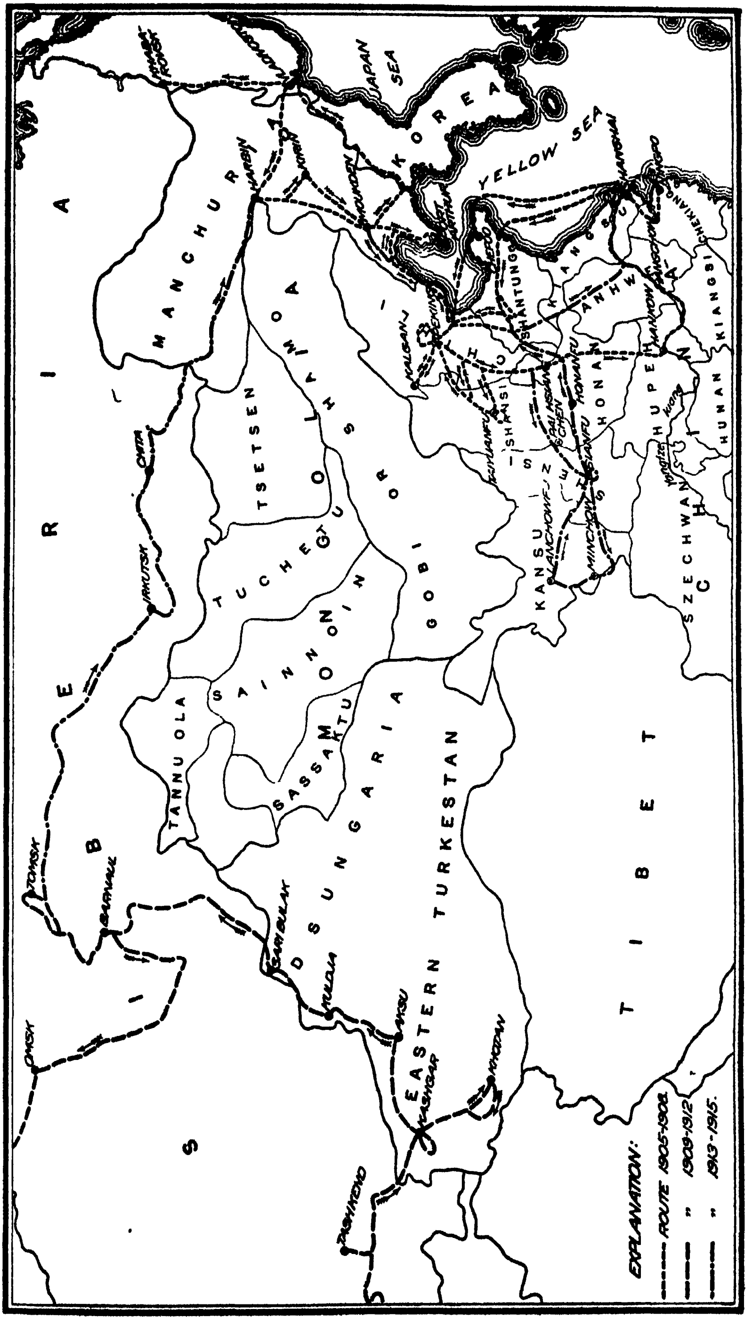


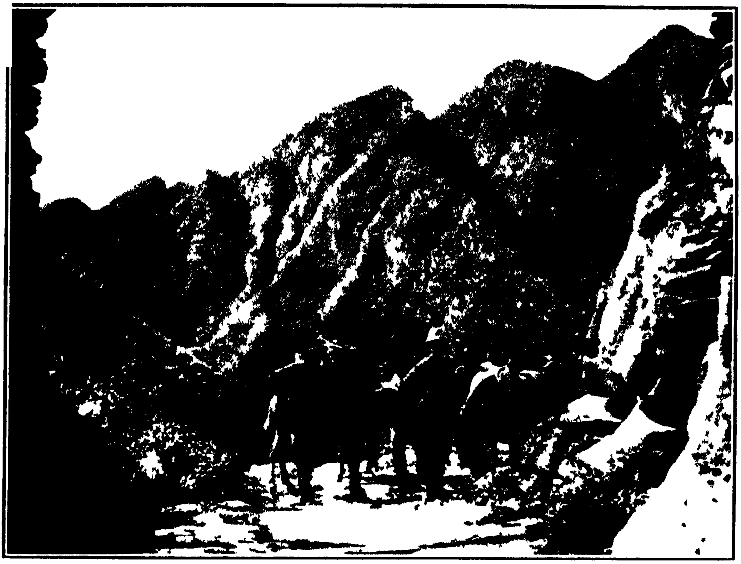
Fig. 4.—Map showing the routes through China and adjoining countries traveled by F. N. Meyer in his three trips as an agricultural explorer from 1905 to 1915.

The work of an agricultural explorer while in the field is strenuous in many ways. He must have a capable interpreter for this work, on account of the difficulties of the language. Without one it would be impossible at times to obtain the plants he is after. The absence of a good interpreter may mean the failure of a whole expedition, as in many parts of China the Chinese refuse to deal with a person who does not understand their ways of doing things.

In China there are 22 different languages and 400 dialects, and this causes endless trouble in traveling from one end of the country to the other. If a person follows the beaten path of travel from one big city to another, he will not experience the difficulties which an explorer encounters, for the latter to obtain the things he is after has necessarily to go into the out-of-the-way rural communities; for instance, one never finds the best groves of fruit trees along the highways of travel.

It is often only through a capable and energetic interpreter that one learns of the whereabouts of a valuable new plant variety. Having finished a day's cart journey and having settled in a Chinese inn, one's interpreter often begins to talk with fellow travelers and local residents about the business in which his master is engaged. The Chinese are very inquisitive. They find out every detail about one another's masters and their particular business. Often these travelers can not conceal their amazement when they learn that a foreigner has come so far to get a product which seems to them so common and with which they are so well acquainted. It frequently happens that such fellow travelers unconsciously give information of great value, and it is here that the capabilities of an interpreter come in. If he allows the conversation to drift into mere trivialities and does not make any mental or written notes, often the whole result of a conversation which lasts for hours is lost to the explorer.

The equipment of an agricultural explorer traveling in the interior of China is similar to the camping outfit used by any explorer going through a rough and unsettled country, although, of course, China in the main is densely settled. Nevertheless the accommodations at the inns are extremely poor. The work of an agricultural explorer is so far



P5936FS

FIG 1.—THE EXPLORER S CARAVAN OF PACK ANIMALS IN A MOUNTAIN DEFILE, COMING BACK FROM AN INVESTIGATION TRIP INTO A FRUIT DISTRICT NORTHWEST OF PEKING, NEAR YING TAU KO, CHIHLI PROVINCE, CHINA.

Photographed September 13, 1913

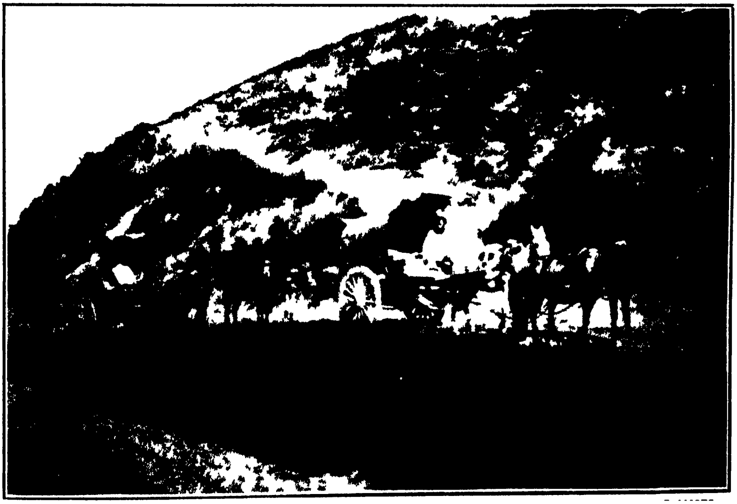
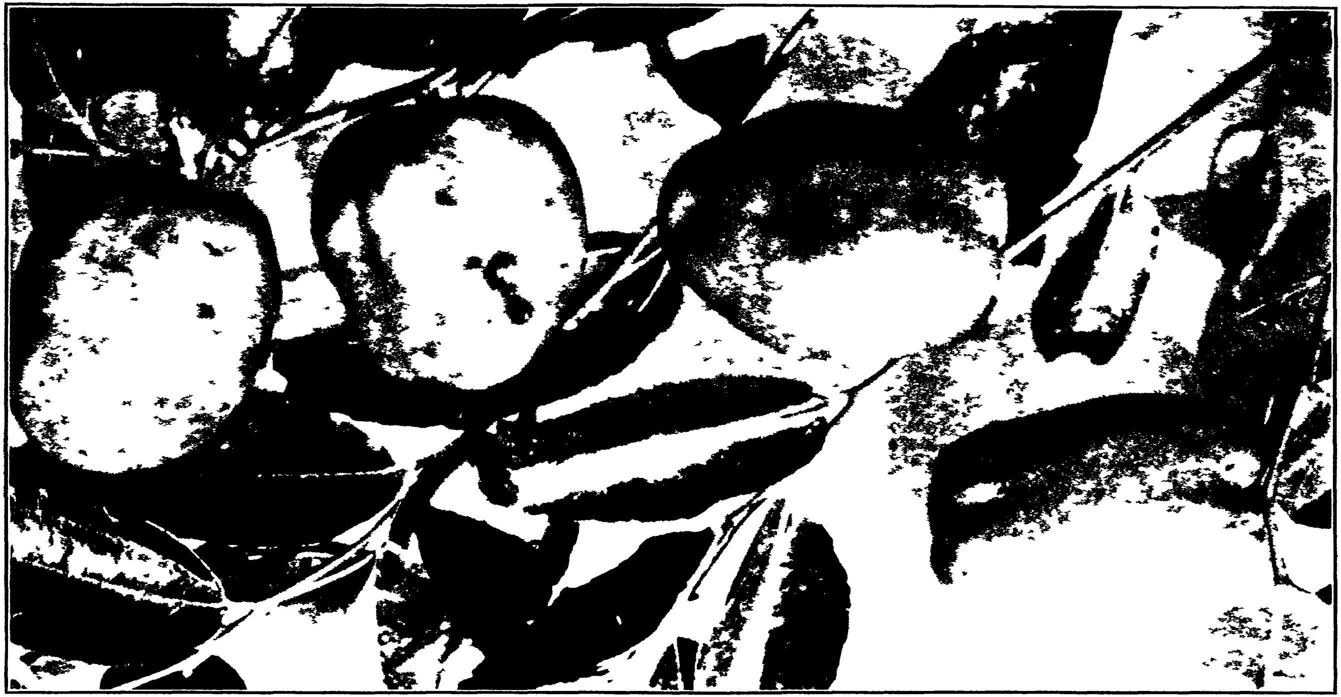


FIG 2.—THE EXPLORER'S CARAVAN, CONSISTING OF TWO SPRINGLESS CARTS WITH AWNINGS OF WOVEN KAOLIANG MATTING (HOLCUS SORGHUM), TRAVELING ALONG A DUSTY ROAD, NEAR TUNG CHEN, SHANSI, CHINA.

Photographed August 6, 1914.



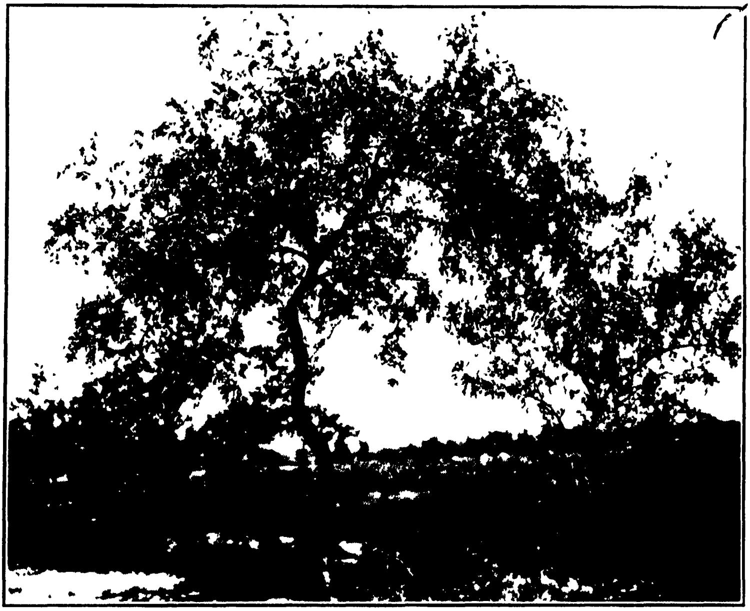
P13104FS

ONE OF THE LARGE-FRUITED CULTIVATED VARIETIES OF JUJUBE (ZIZIPHUS JUJUBA), NATURAL SIZE, CALLED "TA YUAN TSAO," MEANING "LARGE ROUND JUJUBE"

A very promising variety propagated in China by suckers Several cultivated varieties with fruits of this size or even larger have been introduced and fruited in America. Photographed at Pai Hsiang Chen, Shansi, China, August 10, 1914.

WILD JUJUBES (ZIZIPHUS JUJUBA) SHOWING THE NATURAL SIZE OF THE RIPE FRUITS BORNE BY THE SEEDLING TREES BROUGHT INTO AMERICA MANY YEARS AGO

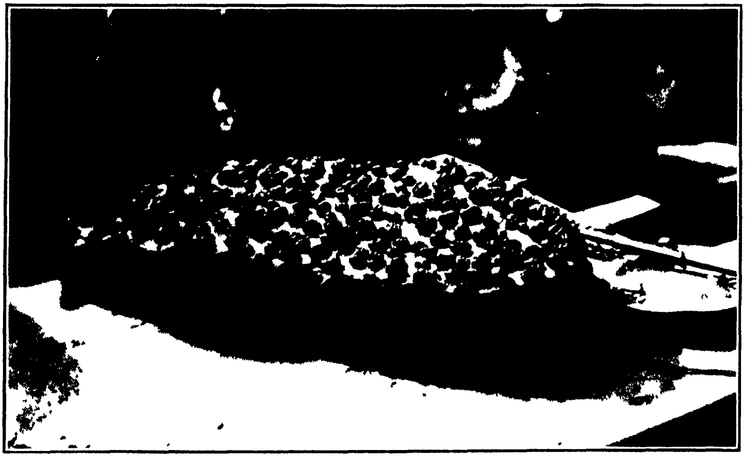
Photographed at Liu Yu Ko, Shensi, China, September 5, 1914



13108FS

FIG. 1.—A SINGLE SPECIMEN TREE OF A CULTIVATED JUJUBE (ZIZIPHUS JUJUBA) CALLED "CHANG TSAO," MEANING "LONG JUJUBE."

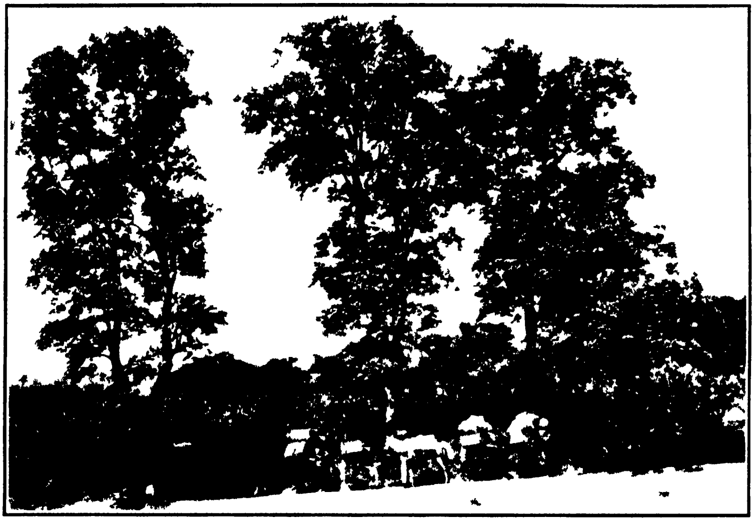
Note the peculiar semidrooping habit, which is characteristic of most jujubes. Photographed at Pai Hsiang Chen, Shansi, China, August 10, 1914.



12297FS

FIG. 2.—A GIGANTIC CAKE OF PROSO (PANICUM MILIACEUM) AND JUJUBES (ZIZIPHUS JUJUBA) BOILED TOGETHER AND SOLD IN SLICES FOR 2 TO 3 CENTS, MEXICAN, A SLICE.

Photographed at Peking, China, April 27, 1915.



P13127FS

FIG 1.—OLD PERSIMMON TREES (DIOSPYROS KAKI) OVER 80 FEET IN HEIGHT. OUR CARAVAN RESTING AT THE BASE OF THE TREES, NEAR KWEI HSIEN, SHENSI, CHINA

The trees are so tall that it is necessary to pick the fruit by means of a long bamboo pole with a bag fastened at the end. Photographed September 10, 1914.

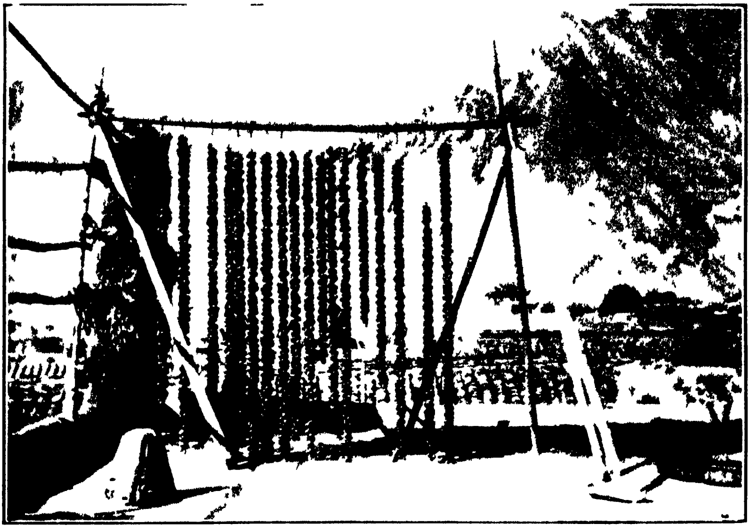


FIG 2.—LONG STRINGS OF PEELED PERSIMMONS HANGING FROM A POLE SET UP ON THE MUD ROOF OF A HOUSE IN SIKU, KANSU, AT THE TIBETAN BORDER OF CHINA.

Photographed November 16, 1914.

A GROVE OF PERSIMMONS (DIOSPYROS KAKI) CONSISTING MAINLY OF DRY-MEATED VARIETIES, ALL GRAFTED ON THE WILD PERSIMMON (DIOSPYROS LOTUS)

At the foot of the Tsing Ling Range near Sianfu, Shensi, China Photographed January 22 1914.

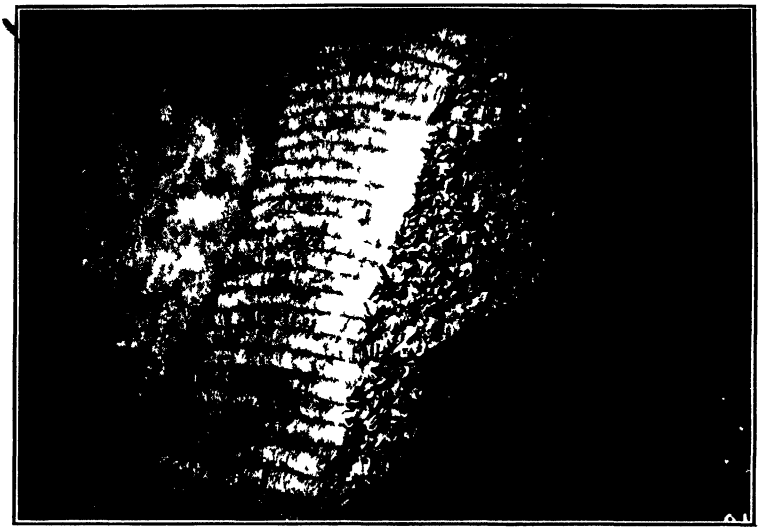


Fig 1.—A Large Stack of Dried Persimmons (Diospyros kaki) in a Fruit Storeroom in Peking, China

The fruits are strung on twisted strings of dried rush stems and in this way the product is marketed ready for human consumption. Photographed March 22, 1913.

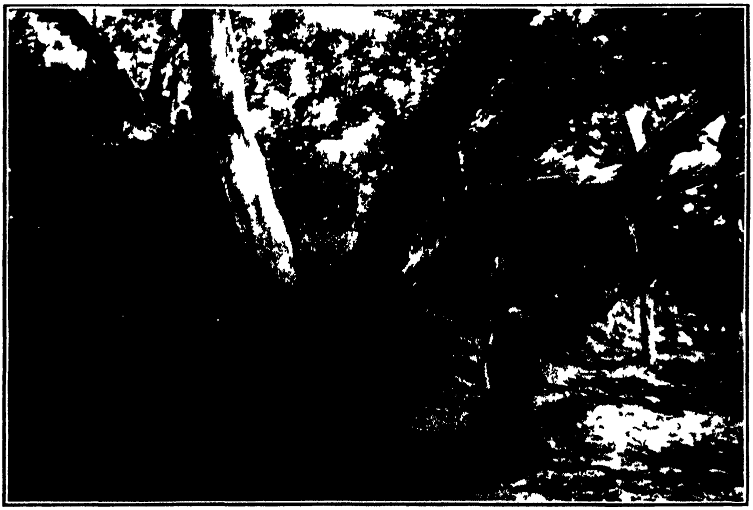
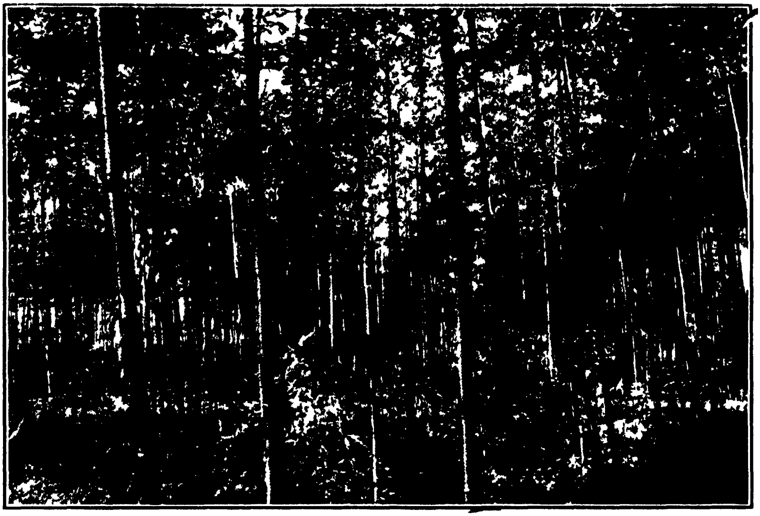


Fig. 2.—An Old Chinese Chestnut Tree (Castanea mollissima) with Bark Scraped Clean by the Natives, Recovering from Attacks of the Blight (Endothia parasitica).

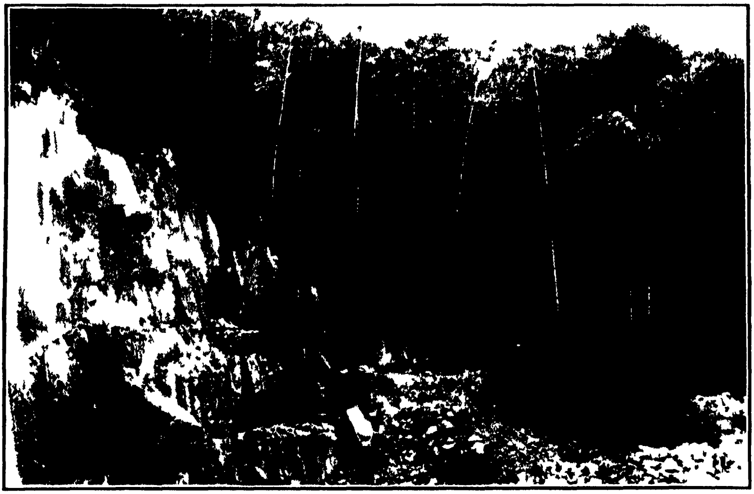
Notice how the wounds are in the process of healing over. Photographed near San Tun Ying, Chihli Province, China, June 1, 1913.



P13206FS

FIG 1.—A FINE GROVE OF A SLENDER TIMBER BAMBOO (PHYLLOSTACHYS SP ) OF VERY UNIFORM GROWTH, MUCH EMPLOYED IN THE MANUFACTURE OF FINE FURNITURE

Native name "Pae tsoh" Photographed at Mokanshan Chekiang Province, China, August 7, 1915



P13201FS

FIG. 2.—A HILLSIDE GROVE OF THE IMPORTANT TIMBER BAMBOO (PHYLLOSTACHYS PUBESCENS) GROWING ON A THIN LAYER OF CLAY LOAM COVERING A STRATUM OF GRANITE ROCK WHICH IS BEING QUARRIED.

Native name "Mao tsoh" This species supplies edible sprouts as well as timber Photographed at Mokanshan, Chekiang Province, China, August 3, 1915 different from that of an ordinary botanical collector that he has to gather live material which is often extremely perishable, and has to be equipped with such paraphernalia as to enable him to send the live material on a long journey to his home country. It is necessary to carry a bale of sphagnum moss, rolls of oiled paper and packing paper, copper labels, notebooks, and herbarium driers in waterproof sacks, and supplies of twine and cloth from which seed bags can be made and in which the parcels of plant material can be sewed.

In sending plant material from the interior of China one has to know how and when to ship it. Seeds like grains and beans are the easiest of all, for when dry they can be packed in cloth bags, labels inclosed, and sent at almost any time of the year. Seeds of a perishable nature, however, like acorns and chestnuts, are much more difficult to ship. These have to be packed in moistened, powdered, washed-out charcoal, or in finely chopped-up dampened sphagnum moss inclosed in oiled paper and put into wooden boxes, so as to prevent the young sprouts from being crushed en route, for often these seeds start to grow in transit. Such seeds have to be sent as quickly as possible after collecting, for many of them perish within a few weeks. Scions and cuttings are even more difficult to handle, for they can be collected only in the resting season, which often is in winter, and have to be put in damp sphagnum moss within a few hours after being cut. I always made it a practice to pack such scions and cuttings the day I collected them and never let them remain unpacked a single night. In severe winter weather we often had to heat water to prevent it from freezing, in order to moisten the sphagnum moss, and sometimes a few minutes after the cuttings were wrapped the parcel was frozen hard, for in the rooms of a North China inn there are no stoves, the paper windows are often broken and torn, and the temperature inside is but little higher than that outside. I kept these frozen packages sometimes for several weeks, until I reached a post office which was willing to receive and forward them either direct to Washington or to the consul general in Shanghai.

I attribute the success which I have had in sending the parcels of living plant material from such far-away towns as Kashgar, in Chinese Turkestan, and Lanchowfu, in Kansu, to Washington, D. C., to these special methods of packing which I have described. It must be admitted, however, that if the parcel post system had not been extended to these inland towns, and if our ambassador in St. Petersburg, the American minister in Peking, and the American consul general in Shanghai had not forwarded these official parcels of plants in their diplomatic and consular pouches through the State Department to the Department of Agriculture, these successes would have been minimized.

Owing to the fact that transportation in China is still quite as primitive as it was in America before the building of railroads, one has to travel there with a caravan composed of pack animals or Chinese springless carts. I found that when traveling with pack animals or with carts, except in the great heat of summer, it was better to walk, because I was then free to examine the roadside plants and trees without stopping the caravan. Often I found I could walk much faster than the caravan. When, however, I traveled through unsafe regions it was necessary to keep close to my men. In all the six years of travel in the interior of China, during which I walked several thousand miles, it has been my good fortune never to have had any accident of consequence, nor have I lost any large collections of material.

The collections of these years of travel comprised about 2,500 introductions, including seeds, bulbs, cuttings, scions, roots, and live plants, most of which were personally selected and generally for some specific purpose, the details of which will be found in the descriptions which were written in the field and appear in the printed inventories of the Office of Foreign Seed and Plant Introduction. A large number of photographs were taken and extensive collections of herbarium material were made.

In a paper of this nature, limited necessarily as to space, one can only pick out a few of the more interesting plants and plant industries. As this work has been going on since the fall of 1905, some of these eastern introductions have become successfully established in the United States and are proving to be valuable additions to American agriculture. Others of later introduction have been here too short a time to enable us to say whether they will be of value. They are strictly in the experimental stage.

## PROMISING NEW CROPS.

One of the most promising tree crops of China is the Chinese jujube (*Ziziphus sativa*). The most common form of this plant is found in waste places and on old walls in several parts of North China. It is a very spiny shrub or small tree bearing small, round fruits of a brown-red color, which are in general sour and have practically no value. The Chinese farmers, however, have selected numerous varieties of this jujube which vary in all possible ways. There are probably 300 or 400 named varieties in China, and while the fruit of the wild type is no larger than a small marble, some of the selected varieties are as large as a good-sized hen's egg. Some types are spherical and of very dark brown color, others being very elongated and light mahogany brown. Others again are very solid meated and can be kept for several weeks in a fresh state before spoiling. Some sorts again are of a very spongy texture and have to be eaten a few days after they have ripened, while others can not be dried, but must be eaten fresh, and still others can be easily dried and kept through the greater part of the year. A few varieties are smoked like hams or herrings and are exported from the Shantung Province to South China, where they form an especially prized sweetmeat with the people of that section. Others are put up in weak brandy and served during the New Year's holidays. One of the largest varieties when processed in a special way with cane sugar and honey makes a delicious sweetmeat comparable to a good quality of the Persian date. The high-class mandarins give them as New Year's presents, and they are served in the best hotels patronized by Europeans, on the passenger steamers plying between Japan and China, and at dinner parties in the various legations in Peking.

The jujube tree in China is one of the few trees which are not so regularly cultivated as the peach or the pear. It stands much more neglect than any other of the Chinese fruits and grows on soil which sometimes is quite alkaline in character and seems to thrive in dooryards in which the soil is packed down until almost as hard as a brick. It responds, however, to cultivation, and in the district around Pai Hsiang Chen, Shansi, where the largest varieties in all China occur, the orchards of jujube are well cultivated. In the Provinces where it is found in its greatest perfection, such as Shantung, Shansi, Honan, and Shensi, winter temperatures never drop very low. Zero weather there is a rare occurrence. In America, however, some of the trees which were introduced in 1906 have withstood a temperature of —22° F. without injury. In general the jujube may be said to be a heavy bearer, and in Texas and California some varieties have proved unusually fruitful. They bear very early. some one-year-old grafts producing as many as 24 fruits.

The jujube will probably prove of the greatest value for the semiarid South and Southwest, especially for Texas, New Mexico, Arizona, California, southern Utah, and possibly it might extend into Kansas and Nebraska. The material so far has been too limited to enable us to distribute small trees of the jujube to the latter States. Trees have fruited heavily at Chico, Fresno, Indio, and Bard, Cal., and San Antonio, Austin, and Fort Worth, Tex.

In the late thirties of the last century jujube seeds were distributed by the Patent Office, and from these seeds large-sized trees have grown and are still standing at various points in the Southern Atlantic States. All of these, being seedlings, bear small, comparatively worthless fruit.

## ORIENTAL PERSIMMONS SUITED FOR DRYING PURPOSES.

In certain sections of the provinces of Shantung, Shansi, Honan, Shensi, and Kansu one finds that strains of persimmons are being grown for drying purposes only. These regions are decidedly semiarid ones, where the autumn is long and the days are quite warm, similar in this respect to the climate of portions of Texas, New Mexico, Arizona, and California. These strains are quite different—not as juicy as those which have been so far cultivated in this country. They are very astringent, so that one can not ordinarily eat them out of hand. Among these varieties for drying purposes there are seedless persimmons as well as others.

A dried persimmon in looks and taste resembles a dried fig, with the exception that it is devoid of small seeds and is coated with a heavy layer of fine grape sugar.

Dried persimmons of different varieties differ both in taste and in appearance. This difference is not due to the variety alone, but to the greater or less care employed in their preparation. The coarser sorts, upon the preparation of which little care has been bestowed, taste very much like cooked pumpkin, but those of finer quality are as fine as dried figs, being even juicier and more palatable because of the absence of objectionable small seeds.

The cultivation of persimmons for drying purposes is a growing industry in China. New orchards are being set out, and since railways have been built new markets for the sale of them have been opened. Whereas in 1908 dried persimmons on the Peking market were extremely scarce, I found to my surprise a few years later huge piles of them on sale there. Upon inquiry I found that these persimmons had come from Honan, into which Province a new railway line had recently been finished.

In drying these persimmons the fruits, when ripe, but before they have begun to soften, are peeled or slashed, and these peeled fruits are then hung on strings to dry in the sun and wind. After drying for several weeks they are put into piles and covered with kaoliang matting and allowed to cure, during which process the grape-sugar coating is formed.

Since this persimmon industry is primarily one for semi-arid regions, the question of a stock which is drought resistant becomes a very important one. After having been a few weeks in China I noticed that the Chinese used a stock which was entirely different from the American persimmon and also was not merely a seedling stock. The bark was blackish in color and in old specimens deeply furrowed, whereas the bark of the ordinary oriental persimmon is of rather a smooth character and shows a tendency to peel off. Upon inquiry I found this stock was called *hae tsaō*, meaning black jujube. This name threw me entirely off the track, for although I saw straightway that it was not a jujube, yet I did not quite know what it was. Then I made it a point to find out where this so-called black jujube grew wild. At last, in a valley north of Peking, near the Nankau Pass, I was shown wild trees of this stock. I recognized it at once as a species of persimmon (*Diospyros lotus*) which is also found in northern India, Persia, the Crimea, and the Caucasus. In the last-mentioned country it is known by the Turkish name of "ghoorma."

This ghoorma when found in its native haunts seems to be able to withstand drought and neglect to a remarkable degree, and it is for that reason, no doubt, that the Chinese have selected it as a stock. It has already proved to be better adapted to our semiarid Southwest than our native persimmon (*Diospyros virginiana*), which has been the only one heretofore used. These varieties for drying purposes budded upon the ghoorma as a stock will probably be very well adapted to large areas of land in the Southwest. Americans heretofore have never realized what an important food product the oriental persimmon is in its native country. Thousands of acres are devoted to its culture, hundreds of varieties exist there, and the trade in dried as well as fresh persimmons compares in importance with our trade in peaches.

### BAMBOOS.

Of all the plants cultivated in China the bamboo is certainly one of the most indispensable. It exists in many species and varieties, ranging from tufts of a grasslike appearance only a foot or so high to jungles of giant canes often over 80 feet tall. Some are found on low, moist places, while others occur on steep, rocky slopes. Bamboos in China are grown in two ways, as clumps near the houses from which canes can be cut at a moment's notice and used for everyday household purposes, such as bean poles, switches for decorative purposes, or for repairing baskets or furniture, etc., and in large groves, often some distance from the villages, where they are grown for timber purposes only. In such groves the canes are cut only at certain times of the year, primarily in the winter months. In some sections of the country, in fact, the bamboo is so indispensable that if taken away the whole fabric of domestic affairs would crumble, and the people would be put to the most serious inconveniences. Bamboo timber in oriental countries in many ways takes the place that metals do with us, especially in the manufacture of household articles. No one can see the uses to which bamboo is put by a Chinese gardener in his little garden patch without realizing what a convenient source of stakes for pea vines, stakes to hold labels, bean poles, temporary fences, guards against chickens, shade supports, fruit-tree props, small garden ladders, stiff brooms for farmyards and barns, temporary lath houses, etc., it means to him.

A fact relatively little known to the American public is that in China and Japan bamboo sprouts constitute a favorite vegetable. There are several species and varieties the shoots of which are edible, and they are not by any means of equal excellence. A good kind of bamboo sprout is a vegetable in a class by itself. Its crispness and freshness of flavor are such as to appeal to nearly everyone the first time it is eaten. It is not uncommon to find foreigners in the Orient who have become quite as fond of bamboo sprouts as the home people are of asparagus.

The varieties which are cultivated for their shoots are generally grown in gardens close to the houses and are heavily manured so as to insure a maximum of sprouts and tenderness of texture. Existing groves of one species in the Southern States and California thrive wonderfully well and from some of them sprouts have been cut which compare favorably with those produced in the Orient. It is believed that in this country the bamboo probably can be cultivated with as great success for table use as it is in the Orient, for not only do the Chinese colonies in our large cities form a ready market for these delicious sprouts and Chinese restaurants consume large quantities in the soups and other dishes served to their customers, but also many Americans have acquired in the Orient a fondness for this vegetable and would be ready to purchase the shoots if they were available.

For impressiveness there is no group of plants which surpasses the bamboo. To wander through an extensive grove in China or Japan makes one imagine himself in another world. One naturally marvels how a grass could grow into such giant forms as one sees around him. It makes upon the human brain possibly the same kind of impression that the ordinary grass might upon a tiny insect walking through it. After having seen the beautiful and useful clumps of bamboo in the Orient one's mind reverts to our own Southern States, and the conviction gradually grows on one that in the years to come many of our southern homes will be embellished by these remarkable bamboo groves. Already a few of these are to be found—enough to show that this is not a fanciful suggestion.

### THE YANG MAE TREE.

In the vicinity of Hangchow, Chekiang Province, there are extensive groves of a peculiar evergreen tree locally called yang mae, but foreigners in that section of China apply the name strawberry tree to it on account of a slight resemblance which its fruit bears to the strawberry. This is an entirely new type of fruit, locally much appreciated, and one which evidently has been in cultivation for a very long period. The tree grows wild in the mountains and bears there small sour fruits. The natives, however, have developed several varieties which they perpetuate by inarching. One of the largest of these has fruits over an inch in diameter, possesses a fine, vinous subacid flavor, and in appearance is so attractive as to make it a very desirable table fruit. These fruits, which ripen in July, are wine-red in color and resemble slightly in outline sycamore balls. They are eaten fresh or as preserves. The trees grow slowly but are long-lived, and from the scanty evidence at hand it seems likely they will thrive along the Gulf Coast and along the milder portions of the Pacific Coast.

### THE CHINESE LARGE-FRUITED HAWTHORN.

In certain sections of the South, such as northern Texas, the apple appears to be out of its range. In China similar regions exist—places where the winds in summer are scorchingly dry and the rainfall often is quite deficient, such as the region around Taianfu, in the Shantung Province. It is here that one finds large and thrifty orchards of a haw (*Crataegus pinnatifida*) which bears fruits the size of a crab apple. These fruits are of a very attractive bright-red color, refreshingly sour in taste, and can be kept for very long periods. They are eaten raw, coated with molten sugar, or better yet when made into delicious preserves or a stiff jelly of fine quality. A few of the smaller fruited sour varieties can be boiled into sauce and supply a very agreeable substitute for the American cranberry. American missionaries in the Shantung Province have learned to utilize the haw in this way. The trees are of low, dense growth, bear heavily, and the finer varieties are all grafted upon seedling stocks. The demand in China for the best quality of these haw fruits is so great that it can not be supplied and the orchards are being extended. The fact that the Chinese have developed from a small-fruited wild hawthorn large-fruited forms of excellent quality naturally reminds one of the many excellent wild species of haws which occur on the North American continent, and one is impressed with the fact that an excellent opportunity to improve a promising native fruit has been neglected.

## CHINESE EARLY CHERRY.

In the early spring of 1907, while near Tangsi, Chekiang Province, the Rev. A. Kennedy, a missionary stationed there, told me of a cherry which was grown in the vicinity and which, though quite small, not up to the American standard in size, was quite early. I visited with Mr. Kennedy an orchard where these cherries were grown, and, although they were leafless at the time, I recognized that they represented a different kind of cherry from the sorts we have. Scions were obtained and sent to the Plant Introduction Garden in California. Several fruit growers were provided with young budded plants, and last October, while visiting the Sacramento Valley, I found such an interest had been created by the remarkable earliness of this cherry that the growers were thinking seriously of setting out orchards of this variety only. In my opinion, this cherry has another important use, viz, as a factor in the production by breeding of earlier, large-fruited varieties.

## THE ORIGINAL WILD PEACH.

During all these years of travel one thing always remained uppermost in my mind, viz, to find whether the peach really occurred wild in China, which country is supposed to be its original home.

In the summer of 1914, while going on foot through a loess ravine in the southern part of the Shansi Province, a few days' march east of Ping yang fu, I found a small, green peach the size of a marble lying on the side of the road. On biting into it I found that the stone was perfectly hard and well formed, and then on looking up I noticed several bushes clinging to the edge of a steep loess wall and having fruits on them of the kind I had found. Here at last was the original wild peach, from which probably most, if not all, of the cultivated strains have been developed. They were growing in such inaccessible, out-of-the-way places that there remained in my mind no doubt of their being genuinely wild. The Chinese, moreover, call them *yeh tao*, which means wild peach. In the Tsing-ling range from Sianfu through to western Kansu I found this wild peach at intervals, sometimes as solitary specimens, at other times in thickets.

## STOCKS USED BY THE CHINESE.

The problem of finding congenial stocks for our cultivated fruit trees for different parts of this country is still in an experimental state, for certain stocks which have proved to be very successful in western Europe when tried in America have proved failures in many instances. It is in a country like China, with her great extremes of climate, resembling in this respect the United States, that we may expect to find a partial solution of this stock problem.

One of the first things which attracted my attention was that in the nursery gardens near Tientsin I found that the Chinese gardeners had grafted flowering plums upon a stock which resembled an almond, also chrysanthemums on the wormwood (*Artemisia* sp.), tea olives (*Olea fragrans*) on privet, and junipers upon the arbor vitæ (*Thuja orientalis*). These facts showed me at once that the Chinese in North China, at least, had tried to find congenial stocks which had root systems that were better suited to dry and alkaline soils than were the root systems of the plants themselves.

One of the plants which most impressed me was the almondlike stock. On asking the Chinese gardeners what they called it they gave me the name of *shan tao shu*, which means literally mountain peach tree. This name suggested the possibility of this stock being the original wild peach. Upon inquiry where this could be seen I was informed that it grew wild in the mountains, but that there were many specimens to be found in the gardens of Tientsin and Peking. Upon being shown a specimen I found it to be the *Amygdalus davidiana*, originally discovered by Father David. This turned out to be a new stock never before employed by any of the Caucasian races, although seemingly in China it has been used for centuries as a stock for various stone fruits. It has even been introduced into various European and American botanical collections. After some difficulties seeds were procured of this *davidiana* peach, by which name it has come to be known in this country, and these have been tested in various places in the United States, as Chico, Cal., Ames, Iowa, and San Antonio, Tex., and, strange to say, they have proved hardy on the northern edge of the peach belt of Iowa and drought and alkali resistant in central Texas, Arizona, and California. It seems as though it would play an important rôle in the development of the stone-fruit orchards of the country.

The common stock for the pear on sandy and alkaline lands in North China is a species of wild pear (*Pyrus betulaefolia*), which bears bunches of fruits the size of large peas and is propagated mostly from cuttings. Trees grown in this country under uncongenial conditions have proved to be well suited to dry and alkaline situations. Unfortunately, however, it recently has been shown to be susceptible to the destructive pear blight, a disease apparently unknown in China.

While these furnish examples of the stocks already used by the Chinese, numerous wild plants, especially among the stone fruits, show promise of being valuable as stocks, and experiments with these now are being carried on in the United States to determine their relative value.

## ORNAMENTAL TREES AND SHRUBS.

So many ornamental trees and shrubs have been obtained from China, especially during recent years, that I mention here only a few of those which were introduced as a result of these explorations and are proving distinct additions to American horticulture.

The Chinese pistache tree (*Pistacia chinensis*) gives promise of being a fine shade tree for large areas in the South and Southwest. It grows to be a stately tree with a dense head of gracefully pinnated foliage, which when it comes out in spring is a wine-red color, in midsummer dark glistening green, while in fall it turns into the most gorgeous flaming reds and yellows, making the tree a very conspicuous object in the landscape. It resists drought wonderfully well and will be especially appreciated in the warmer semiarid parts of the United States.

An elm (*Ulmus pumila*), native to Manchuria and North China, which in its native haunts resists drought and alkali to a considerable degree, proves to be of remarkable vigor and of great promise as a shade tree and windbreak in North Dakota and other regions in the Upper Mississippi Valley, where trees have a hard struggle with the climate.

The Chinese white-barked pine (*Pinus bungeana*) is undoubtedly one of the most striking in appearance of all the pines, with its glistening white trunk and its rather airy tufts of needles. It is decidedly a tree for semiarid regions, where it shows its characteristic white bark much earlier than it does in damp climates. When seen on burial grounds in North China its impressiveness is unsurpassed, and it might become in the future a favorite tree with Americans for use in cemeteries and formal parks and private grounds. Until 1914 this remarkable tree was supposed to occur wild only in the Province of Hupeh, but I discovered it scattered and in groves in southern Shansi, central Shensi, and southwestern Kansu.

A striking variety of willow with a naturally well-rounded head occurs near Peking and in the Shantung Province. It withstands drought, alkali, and cold remarkably well, and a clump of them is already growing in California, where the trees have received a great deal of attention because of their trim and formal appearance, which makes them peculiarly attractive.

Of the many shrubs useful for gardens and dooryards one of the most interesting is the yellow-flowered rose (*Rosa xanthina*), which occurs in its semidouble form cultivated in gardens in Peking, while the single form occurs wild in the mountains of Shansi and Shantung. The bush is remarkably hardy and drought resistant, and in spring it is covered with a multitude of medium-size pale-yellow flowers. As a factor in the creation of new types of yellow roses it will probably be of importance; in fact, Mr. G. W. Oliver, of this department, informs me that he has already produced a hybrid between it and the *Rosa rugosa*, of the type of the *rugosa* but with yellow flowers.

## CHINESE VEGETABLES.

While there are a great number of different vegetables in China, the great majority of them do not appeal to the palate of the Caucasian. There are some, however, which are worthy of the attention of American gardeners. The best of them is the *pai ts'ai*, or Chinese cabbage, which is grown primarily in northern China. The cabbages from Shantung especially are noted for their fine quality and are exported extensively along the coast of China even as far as Canton. These *pai ts'ais* do not emit as strong an odor when cooked as does the ordinary cabbage. They are delicate in flavor and are considered to be more easily digested. They can be used in a number of ways, resembling in this respect ordinary cabbage. It might be classed as a vegetable somewhere between Swiss chard. Romaine lettuce, and the ordinary white cabbage. Its successful establishment in the United States appears to have been already accomplished, and on several of the large markets it is being sold under the name of celery cabbage.

## GINGER.

Fresh ginger is an article of food in China which one can buy in practically all of the larger markets during the greater portion of the year. The rhizomes are sold by weight and are eaten shredded or sliced in soups and in various meat dishes, and they impart a delicious and appetizing flavor.

Ginger is of great antiquity in China and was known quite well several centuries before the commencement of our era.

Kung-fu-tse, or Confucius, as his name is Latinized, China's greatest philosopher, stated in one of his discourses to his students that every person ought to eat ginger at least once a day for his health's sake.

It is rather surprising that ginger is so little used in American cooking. Several of our dishes could be much improved by a judicious use of fresh shredded ginger, and in our Southern States the plants might be grown in kitchen gardens without much trouble.

There are several varieties of ginger in China; the most productive sorts have to be grown in wet soil, and they need a long, hot summer in which to grow to perfection. It is mainly around Canton, in South China, that such sorts are grown extensively, and from that region tens of thousands of dollars' worth of preserved ginger is exported every year to various parts of the globe. However, there are also varieties that can be grown in much cooler localities and relatively dry soil. On one of my trips in the Shantung Province I found a large field of such dry-land ginger near Ninyang at 36° latitude. In this latitude in the eastern United States we find such cities as Knoxville and Nashville, Tenn. In the truck sections along the Atlantic we may find conditions favorable to the cultivation of ginger commercially and make ourselves independent of foreign importations.

Ginger, culturally, must be treated in much the same way as sugar cane, especially as regards storage during the winter; the rhizomes are injured by light frosts and can not stand drying out. It is not unreasonable to expect within a few years a keen interest in this interesting new root crop.

## THE KAUBA, A NEW CHINESE WATER VEGETABLE.

One of the most interesting phases of Chinese agriculture is the way swamp lands are being made to yield crops. The Chinese as a race do not object to laboring in mud and in water as the Caucasian peoples do; hence, rather than drain their marsh lands, they have selected crops for them that bring in good returns.

Among swamp-land crops, rice of course stands out primarily, and in addition to it there are various root crops such as the lotus (*Nelumbium speciosum*), the water nut (*Eleocharis tuberosa*), wet-land taro (*Colocasia antiquorum*), and arrow-leaf (*Sagittaria sinensis*). A crop which is grown as a vegetable in many parts of China is the kauba (*Zizania latifolia*), a water grass very closely related to our own wild rice. It is not the seeds, however, nor the leaves, but the swollen fleshy stalks that are used. These are eaten, shredded or sliced, boiled in soups, or, when scalded, as a special salad.

This kauba is planted in rows and cultivated regularly and must grow in at least a few inches of standing water. An immense trade in its succulent shoots is carried on every season. Foreigners often call it water bamboo, and some western residents in China have become so fond of it that they have it on their tables whenever procurable. Some preliminary experiments made in this country show that this new water vegetable may possibly become some day a source of income to such truck farmers as are willing to engage in its rather disagreeable culture.

## CHESTNUT-BARK DISEASE.

One of the duties of an explorer is to keep a careful lookout for plant diseases, insect as well as fungous, and during the six years of travel in China several of interest were discovered, the most important one of which was the chestnut-bark disease. It was found, for instance, that the chestnut blight (*Endothia parasitica*) exists on the chestnut of North and central China (*Castanea mollissima*), while in Japan it was found in abundance on the native species (*Castanea crenata*). In both countries many of the trees attacked show themselves remarkably resistant and great hopes are entertained that by careful selection and hybridization work chestnut strains can be created which will prove to be either wholly immune to this destructive bark disease or at least so resistant as not to be damaged very severely. The hybrids which Dr. W. Van Fleet has already produced in this country indicate that this is a promising field for the plant breeder.

In conclusion, I may be permitted to state that one of the most gratifying sensations of an explorer is that of coming back to this country and finding that certain of his new introductions are growing successfully and are appreciated by his fellow citizens, and that, moreover, some quite new industries are in process of evolution, based upon material which one has himself sent in from some foreign land.

# HOW THE WHOLE COUNTY DEMONSTRATED.

By Bradford Knapp, *Chief*, and Jesse M. Jones, *Agriculturist and Field Agent, Office of Extension Work in the South, States Relations Service.*

AGRICULTURAL evolution has not been slow in Christian County, Ky. Four years ago a business men's association was formed and immediately became interested in agriculture; a county demonstration agent was appointed in July, 1912, since which time 18 community clubs with 700 members have been formed; a good-roads association is responsible for the farmers' ownership of 250 split-log drags with which they keep in condition upward of 400 miles of road; the agent has demonstrated methods which have led to increased crop yields, introduced new crops, readjusted farm practice, established demonstration farms, induced the feeding of more beef cattle, augmented dairying, organized the county and fought hog cholera effectively, obtained wider markets for farm products and brought city and farm business men into closer relations.

Christian County has grown from the standpoint of business, but it also enjoys more social activities. It is located in the southwestern part of the State, in what is familiarly known as the "Pennyroyal" section. Its population, according to the census of 1910, was 38,485, an increase of less than a thousand in the 10-year period. The last census also shows that there are 3,900 farms in the county, 56.9 per cent of which are operated by owners and 42 per cent by tenants. The average size of farms is 107.1 acres, of which 77.5 acres is improved land. Ninety per cent of the land of the county is in farms and 72.3 per cent of this farm land is improved. Hopkinsville, the county seat and chief town, had a population, according to the same census, of 9,416. Pembroke, 731, and Crofton, 402, are the towns of next importance in the county. The chief industry is agriculture, there being relatively few manufacturing enterprises.

Prior to four years ago the usual organizations were interested in public-welfare movements, and progress was relatively slow and with frequent back sets. About four years ago the Hopkinsville Business Men's Association was

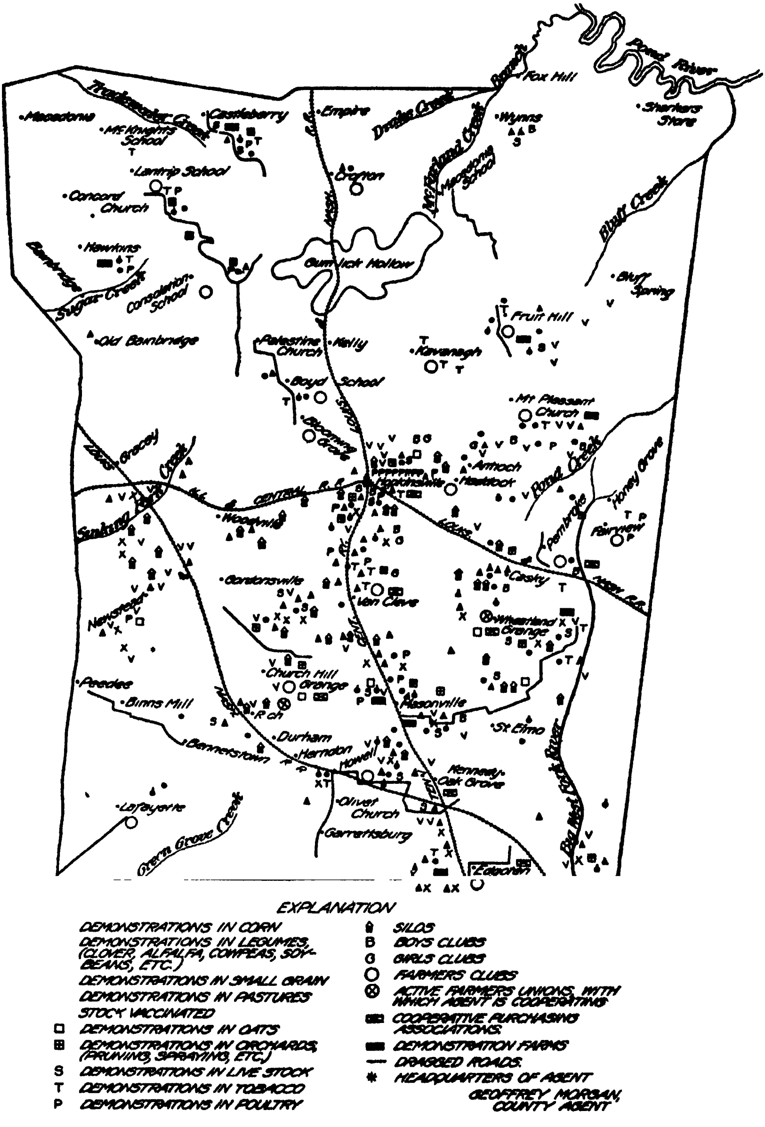


FIG 5—Christian County, Ky—Partial representation of activities of the county agent, showing character, distribution, and centers of organization

formed and adopted for its main work the development of the resources of the county. This association was deeply interested in the agriculture of the county. Similar organizations prior to that time had been chiefly interested in trying to locate factories and other industries. Repeated attempts to arouse the agricultural interests were made through speaking campaigns, but the farmers took relatively little interest in efforts of this sort.

The first effort of the present association was again to organize lecture courses throughout the county to instruct the farmers. Although prominent speakers were chosen, these courses were failures because the farmers did not attend. In 1912 the organization became interested in securing an agricultural agent to work in the county. A so-called "crop improvement association," composed of a few farmers and some business men, was formed under the auspices of the Business Men's Association and as an adjunct of it. They secured some financial aid from outside the county and were able to interest the fiscal court to appropriate some funds. With these and the cooperation of the United States Department of Agriculture an agent was appointed July 1, 1912. At that time the farm-demonstration work of Kentucky was under the supervision of the Office of Farm Management in the United States Department of Agriculture. On July 1, 1913, it was transferred to the Office of Farmers' Cooperative Demonstration Work, which had charge of the work in the Southern States, and is now known as the Office of Extension Work in the South. Cooperative arrangements were perfected, effective July 1, 1914, under the Smith-Lever Act, by which the county agent became the representative of the College of Agriculture of the State University of Kentucky, and also of the United States Department of Agriculture, States Relations Service, Office of Extension Work in the South. From that date until the present time a county agent has been continuously employed in the county.

One of the several difficult problems confronting the county agent was social and economic more than agricultural. It would be impossible in this article to trace the causes of this condition or to explain the reasons for its existence. Suffice it to say there was a lack of cordial feeling between the farmers and the business interests of the towns in that county. At certain periods of time this feeling had been somewhat intense. The statement is made simply to show the situation facing the county agent. Members of the association and business men in the cities and towns simply placed themselves behind the agent, introduced him to the people so far as they could, and advised him as to what they deemed to be the real problem. The attitude of some of the farmers may be understood from a statement of one farmer who said that the whole movement was "absolute foolishness."

The county agent set out to become personally acquainted with the people and their problems by communities. He usually visited in a neighborhood, called a few of the principal farmers together, stopped with them over night, and endeavored in every possible way to understand their views and their problems. Usually these few men who attended the meetings and conferred with him were induced to become demonstrators and to undertake to do some specific work in crop production upon their own farms under improved methods. By increasing the interest the agent gradually worked each community into the idea of having some community organization. He was greatly assisted in this by the fact that one community had a very good organization, the Church Hill Grange, formed in 1873. This grange had done excellent work in the years gone by, especially in conducting stock sales.

Membership in these little community organizations, started by the county agent, included the entire family, the women being invited to attend as well as the men. As each club was started with relatively few families, each member was required to bring a neighbor, and thus the membership expanded so that each club showed a steady growth. There were practically no by-laws and no elaborate forms. No membership fees were required, and when any expense was incurred a free-will offering was taken to cover the amount. Constant effort was made to inculcate the idea that these clubs were of importance, and that they were entirely controlled by the members in the interest of the farmers. Besides the regular meetings held, these clubs were used to promote all kinds of educational work. The county agent visited neighborhoods regularly, looked over the farms during the daytime, and often called the farmers together at demonstration fields being conducted by farmers under his supervision. In the evening he attended and assisted in the meeting of the local community club. At times the women took charge of a meeting, the entire program being devoted to their problems. The business men were interested in these clubs and the community idea of organization, and often came out to assist in the meetings. One prominent citizen who is a member of these clubs said: "I have not missed a meeting since the club was organized. Before its organization the neighbors hardly knew each other." Another said: "Since these associations were formed there has been wonderful improvement in farming conditions. Farmers are all studying and reading and realize at last that farming is an extremely intellectual calling." The total number of organized clubs is 18, with a total membership of more than 700.

The county agent traveled about the county with a horse and buggy. He often took the best men in the county with him in his work. As it was necessary to cover the entire county, it soon became apparent that one of the chief needs of the county was better roads. Hence, a "good-roads association" was formed for this purpose. Meetings were held, ending in a barbecue given by the business men of Hopkinsville to the farmers of the county. There was a large attendance of country people and a great forward step made in bringing about a better feeling between them and the town people. Now there are 250 split-log drags in operation in the county, the larger part of which were bought by the fiscal court and donated to the farmers. These, as a rule, are operated without cost to the county, largely through the instrumentality of these community clubs. Practically 400 miles of road are now regularly dragged by the farmers free of charge. The merchants at Hopkinsville have offered prizes to the farmers for the section of best dragged road in the county. There are 350 miles of macadamized roads, in the construction of a large part of which the farmers cooperated. The president of the Business Men's Association says "The farmers cooperated, giving one-third to one-half or possibly more, for the construction of pikes." A "good roads day" was held in response to a proclamation by the governor, and in Christian

County it met with hearty response. Business men turned out with the farmers, stores of the city were closed, and on one of the principal roads at least 90 per cent of the workmen were city men. Stone was contributed by contractors, concrete firms furnished men gratis to repair bridges, one company supplied outfits for trimming trees, and a large amount of work was done by the county and the town working side by side. Forty carloads of crushed rock were moved from one spot during the one day, which shows the great number of workmen and teams at work. Such results could only be accomplished through unity of purpose and cooperation of all the people.

The principal crops of the county are corn, tobacco, and wheat. The census shows that from 1900 to 1910 there was a slight increase in average yield per acre of corn, amounting to four-tenths of a bushel. The county did not produce enough to supply its own needs, and the method of cultivation was generally with the turning plow and deep enough to injure the roots and prevent full production. Among the first efforts of the county agent, therefore, were demonstrations in better methods of corn production conducted in every community in the county. The first of these was in the year 1913. The average of the county before this was a trifle over 24 bushels per acre. These demonstrations averaged 38.8 bushels per acre. The next year they averaged 40 bushels per acre. At the present time 80 per cent of the corn in the county is cultivated by modern, improved methods, and with modern implements (Pl. XXXVII, fig. 1). One section of the county, which has been importing 40 carloads of corn annually, this year supplied its own needs and exported 8 carloads.

Many farmers thought that because a large part of the county was of limestone formation no addition of lime to their soils was necessary. Upon examination of the soil and a study of crops its use was urged. The county agent arranged a lime-crushing demonstration, and as a result 10 limestone crushers have been purchased, either individually, in partnership, or by communities. In addition considerable lime has been shipped in from outside the county. Three hundred tons were used in 1913. In 1914 this increased to 5,315 tons; in 1915 to 10,555 tons. The effect of the application of ground limestone rock and agricultural lime to the crops was demonstrated.

Special mention should be made of its application to red clover, which before this time had been a practical failure on many farms, and only a partial success on others. Many demonstrations were conducted to show the effect of applying lime to this crop. The instructions of the agents were also followed as to time and method of sowing, use of additional fertilizer, etc. Now practically all farms in the county are able to grow the crop successfully, because of the lessons learned.

Many people in the county think that the best work done by the agent in crop demonstrations was the introduction of crimson clover, for the improvement of the land and as a cover crop. In 1912 no crimson clover was sown. The next year 350 acres were sown in demonstrations on various farms. In 1914 the acreage increased to 5,580, and in 1915 to 7,800, whole neighborhoods having sown it generally.

As not enough corn was raised to supply the demand, the growth of barley was recommended for a number of reasons, especially because in this county it yields almost twice as much as wheat, furnishes more grazing, makes possible a second crop of corn, beans, peas, etc., and gives a better distribution of labor. The census of 1910 showed 10 acres of barley in the county. In 1912 there were 20 acres. In 1913, the first real year of demonstration, there were 250 acres. In 1914 this had increased to 3,600 acres, and in 1915 to 7,000. Farmers, business men, and the milling companies of the county heartily approve of the growing of this crop.

Fertilizer and variety tests of wheat were made by the farmer under the direction of the county agent. The results of these tests have been put into application on many farms, and where used to-day the average yield is practically doubled.

Some attention has been paid to tobacco, the chief cash crop of the county. The average yield of demonstrations more than doubled the average production of the county. The object has been to increase the profit in the production of tobacco by readjusting the entire farm practice so as to equalize the labor load, produce home supplies, maintain soil fertility, and have a number of other cash products for sale.

Alfalfa has also been introduced and is now being successfully grown on 22 farms as demonstrations. There are 360 acres in the county. Its growth is not extending more rapidly for several important reasons, the chief one being because the cuttings come at such times as to interfere with the busy seasons on the farm. It is therefore not a popular crop in the county, and its place is mainly taken by red and crimson clover. Other crop demonstrations have been with sweet clover, turf oats, soy beans, rape, pastures, orchards, truck and whole farms as demonstrations. In nine communities of the county entire farms are used as object lessons, the farmer pursuing the instructions of the county agent on the entire farm.

The introduction of more and better live stock has not been neglected. A creamery was started April 1, 1914. The number of patrons at the start was 7 and the number of cows 40. By the end of the year there were 59 patrons with 600 cows, 73 cream separators had been sold, and 350 head of dairy cows were being fed under the instructions of the county agent. In 1915 there were 95 patrons.

To arouse a greater interest in beef cattle the county agent, early in the work, piloted a representative body of farmers to a near-by county to study feeding methods. This trip, together with personal efforts, resulted in an increased number of pure-bred cows, from 10 in 1912 to 100 in 1915, and in the number of cattle fed from 250 in 1912 to 1,800 in 1915. Eight regular demonstrations in the feeding of cattle for market were conducted.

Interest was aroused in the erection of silos. In 1910–11, or before demonstration work started, there were 12 silos; the report of the Commissioner of Agriculture in 1912–13 shows 36 silos in the county, 30 of which were wood and 6 concrete. The annual report of the county agent for the year 1914 shows total number of silos in the county 66; the present number is 101.

Poultry raising received attention. Twenty-six farmers started pure-bred poultry production. A committee of Hop-

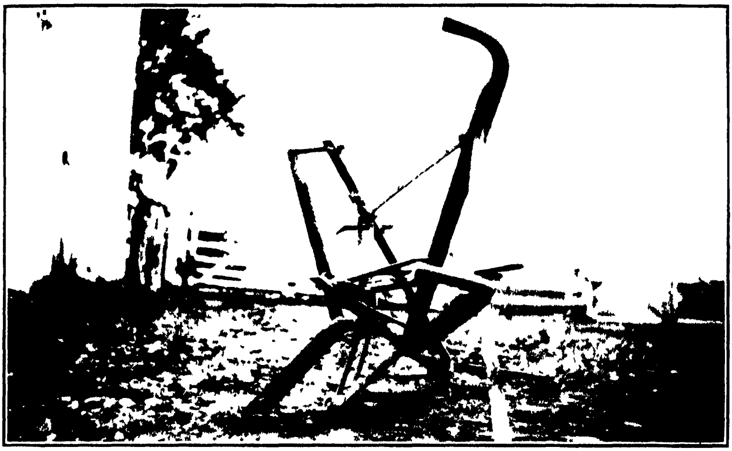


FIG. 1. ATTACHMENT FOR ORCHARD HARROW INVENTED BY COUNTY AGENT.

Over 1,000 of these are in use in Christian County, Ky. Note the weed-cutting bar attached to back cultivator teeth.

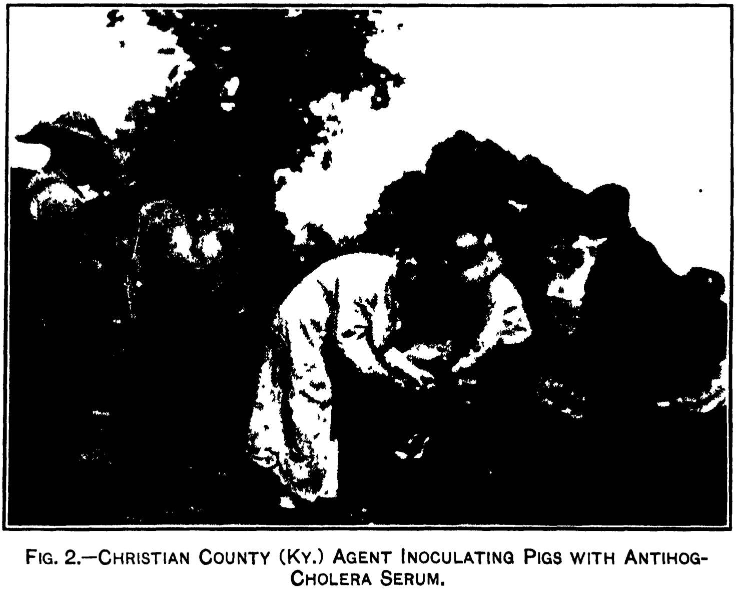


FIG. 2.—CHRISTIAN COUNTY (KY.) AGENT INOCULATING PIGS WITH ANTIHOG-CHOLERA SERUM.

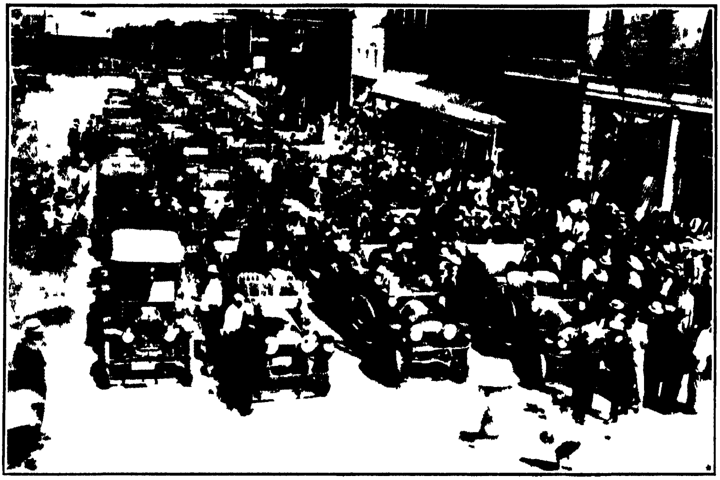


FIG. 1. AUTOMOBILES READY TO CARRY PASSENGERS ON TOUR OF INSPECTION OF FARMS IN CHRISTIAN COUNTY, KY.

FIG. 2.—FARMERS INSPECTING YEARLING GILTS WHILE ON TOUR OF CHRISTIAN COUNTY, KY.

kinsville business men assisted in this work. Prizes were arranged for at the fair. The first show was held in 1914 with 840 entries. In 1915 there were 1,490. Poultry buyers estimate that turkey production has increased 100 per cent and chickens 40 per cent.

Perhaps no piece of cooperative effort shows the influence and effectiveness of the community organization of the county better than the work done in the eradication of hog cholera. The subject of hog cholera was discussed with the community clubs during the early stages of the county agent's work. A careful survey made in 1912 showed the losses that year to be $225,000. The county agent not only demonstrated the use of the serum treatment himself, but arrangements were made with 11 doctors to inoculate hogs free of charge (Pl. XXXVII, fig. 2). A number of farmers also gave their services. Arrangements were made with the State serum plant at the experiment station at Lexington to supply the serum in sufficient quantities, and proper storage was provided at Hopkinsville. Farmers were instructed to report all cases of sick hogs to the president of the farmers' club. The president of the local club then made the arrangement by telephone for prompt inoculation and cleaning-up of the premises. This method of procedure has brought the disease under absolute control in three years. In 1913 the losses were reduced to $150,000. In 1914 the losses were practically $1,000. There are now more hogs in the county than ever before in its history, and the disease seems to be under complete control (Pl. XXXVIII, fig. 2). Effective organization and cooperation of all the people are mainly responsible for these results.

Another item that shows organization work and the complete cooperation of all the people of the county is the development of a better market for hay, oats, corn, and barley by the erection of a feed-mixing plant in 1914. The mill interests of the county now consume a larger amount of the wheat produced in the country. One of the mill men recently said: "Five years ago 50 per cent of the wheat was shipped out of the county as grain; in 1914 this was reduced to 15 per cent, and in 1915 not over 5 per cent. The remainder was sold in the county for milling purposes."

Other items of organization work have been as follows: A fair association has been formed; medical instruction has been introduced into the schools of the county; a public library and hospital have been built; the school system of the county has cooperated in all educational work; both town and country merchants have offered prizes to members of the boys' clubs; also for cooking in the schools, and have put women's rest rooms in the stores for the use of the public. This step was appreciated and the rooms are quite heavily patronized.

A woman agent in charge of the girls' canning clubs in home demonstration work was appointed in the spring of 1914. There is now an active girls' canning club in every community in the county, attended by the girls and also by their mothers. The surplus fruits and vegetables of the farm are now being canned and preserved for winter use. To-day there are 12 social clubs which meet regularly in the country, 15 parent-teachers' and mothers' clubs, and there is not a school in the county which does not have some form of community meeting. The schoolhouses are generally used for the meetings of the community clubs. In some instances farmers have given sufficient ground for amusement purposes at the schoolhouses. Here may be found the ball diamond, tennis courts, and basket-ball courts. Both country and town people are beginning to believe that country children have as much right to a good time as those of the town.

Another instance of organization work is the cooperative purchase of commercial fertilizer. Through no fault of the merchants, but due to a system in existence all over the State, farmers were buying their fertilizers partly on credit and partly for cash, but almost invariably at retail rates. The farmers' clubs became interested in cooperative purchase of supplies. By community action federated into a county-wide movement, more than 3,000 tons of fertilizer were purchased in one year, resulting in a saving of approximately $3 per ton. In this work they have been assisted materially by local merchants who have acted as distributors and practically as underwriters of the whole proposition. At present, instead of buying indiscriminately by name or brand, farmers have learned to buy the plant food shown to be needed by their soils and crops. This is generally done under the instructions of the county agents. The merchants have been brought to see the necessity of making the farmers prosperous. One of them said that, while he did not make as much on the sale of fertilizer as formerly, he dealt for cash, which saved the farmer money, and enabled him to reap his reward in an increased sale of farm implements in which he is also engaged.

Because of three bad crop years the bank deposits of the county do not show a material increase. However, their surplus and profits have increased an average of 30 per cent, and dividends have been raised from 5 and 6 per cent to 8 per cent, or maintained at the latter figure.

The office of the county agent is with the Business Men's Association in Hopkinsville. There the farmers are brought into touch with business men. The agent is able to assist by keeping them advised as to conditions and the needs of the farmer, and in this way they are able to anticipate the needs of their customers and handle stocks of goods accordingly.

During the early summer of 1915 the extension division of the State, representing the college and the United States Department of Agriculture, arranged for a visit of several hundred farmers from counties of central and eastern Kentucky, escorted by their respective county agents, to Christian County to inspect the work of the past three years. The farmers and business men of the county joined heartily in this movement. At once they proceeded to "put their house in order" for a visit. The itinerary of the party through the country districts was planned. The farmers thoroughly dragged every foot of the 100 miles of road to be traveled by the party. Not only was this done, but the yards were cleaned up and placed in good order; the sides of the road were mowed; the weeds were cut under the fences and back to the growing crops, and arrangements made to have farm live stock at convenient points for the inspection of the visitors. One hundred automobiles were furnished and driven by the business men of the county (Pl. XXXVIII, fig. 1). Even repair cars were provided in cases of breakdown. Farm gates were left wide open and part of the route lay through the farms themselves. Refreshments were served to the visitors at various points and free banquets and entertainments furnished by the people of the city as well as by some of the farmers. Stops were made at certain of the farms where the county agents, other extension workers, and farmers explained the improvements made and the system of work pursued in the county. Three public meetings were held during the day.

The visitors fully appreciated and understood the great agricultural improvement in the county. A distinct impression was made by the public spirit, the aroused county consciousness of the people of Christian County. Country people and town people vied with one another in extending hospitality, and in manifesting their constant pride in their homes, their farms, their business, their peaceful surroundings, and in the things accomplished in the county during the three years. A bank president said: "Every man can see improvement in conditions and a better feeling between town and country. This is attributable to the demonstration work carried on by the United States Department of Agriculture and the agricultural college. Banks no longer own farmers; the farmers own the banks." A director of the Business Men's Association said: "The spirit of cooperation began in the country and not in the city. This demonstration work has helped business in Hopkinsville 25 per cent."

A successful farmer said: "There has been a revolution in sentiment between the country and the town people, as well as in farming. City men leave their business and go to Washington in an effort to tender the farmer financial relief. Farmers respond to every call of the business men for cooperation."

A business man said: "A few years ago all kinds of jealousy and bad feeling existed; now nothing but the best of feeling for the other's welfare. Many people in the county say the town and the country are one."

While it is true that improvement begins with the individual, there is such a thing as the public conscience being aroused to improve general conditions. The effort to improve Christian County began with a few. It took hold of families in the scattered communities of the county. It touched farms, then neighborhoods, then communities.

The spirit of the new agriculture, and especially of labor intelligently applied to farm problems, and the great spread of this educational movement which brought men and women together, finally took hold of the whole of Christian County, and Christian County to-day stands as a demonstration of the effect of education and organization under the proper leadership. The people were taught to be self-reliant and to do things themselves. The result: A whole county demonstration, or better agriculture, better business, and better living.

Let us examine the work in another county.

### CULPEPER COUNTY, VA.

Culpeper County, Va., is located in the northern part of that State, in the heart of the Piedmont section. Except for a little lumbering, the county is entirely devoted to agriculture. The principal town is the county seat, Culpeper, with a population of 2,000. Other important centers are Rapidan, Brandy, Lignum, Mitchell, Stevensburg, Boston, Rixeyville, Jeffersonton, and Eggbornsville.

In November, 1910, the fiscal court was invited to cooperate financially with the United States Department of Agriculture in securing a county agent. This invitation was accepted unanimously, and in March, 1911, one of the successful farmers of the county was appointed. Since that time there has not been a vote against the appropriation, which is renewed annually. The amount voted has been increased four times and the same agent has been continued in the work.

While the fiscal court was well aware, at the beginning, of the value of demonstration work to the county, the farmers were not so receptive. No doubt they felt that they were doing well enough, and with good reasons, as the census report for 1910 shows that out of 1,615 farms, averaging 134.9 acres each, 1,415, or 87.6 per cent, were operated by owners; 1,131, or nearly 80 per cent, of which were free from mortgage. This spirit of aloofness has been replaced by most cordial and hearty cooperation; to-day invitations are extended the agent on every hand. At first he had to spend from 4 to 5 hours to secure the cooperation of a farmer; to-day the calls upon him for assistance—by day and night, by letters, telephone, interviews, and visits—require all of his time.

After a careful study of conditions the county agent and those supervising him decided that their program of work

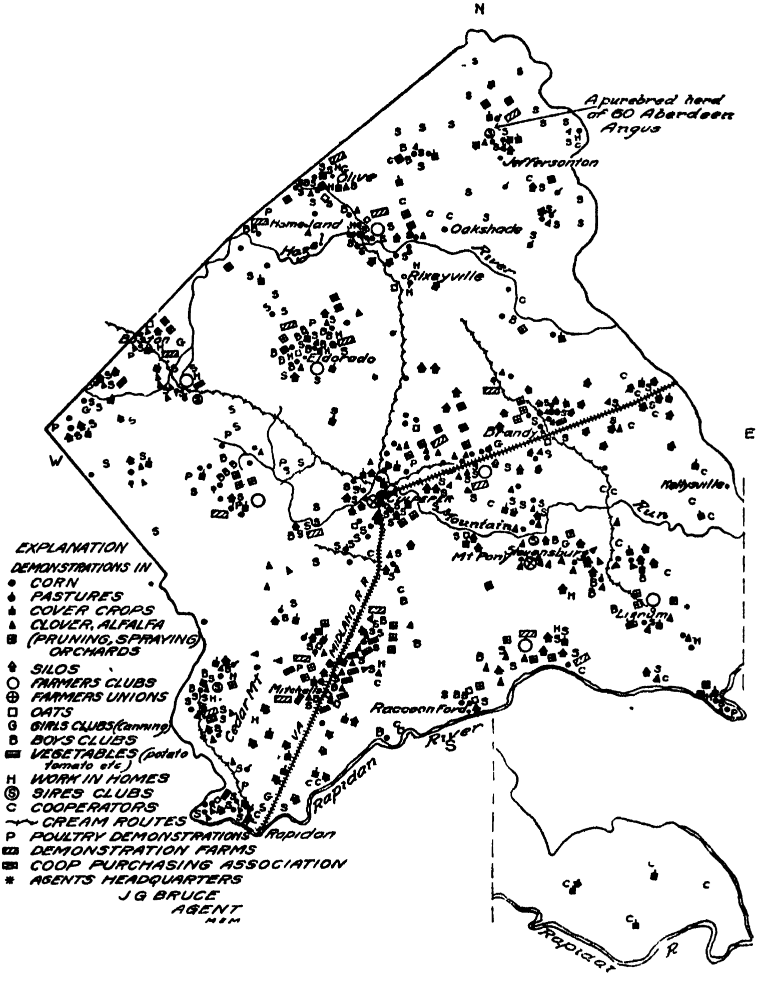


FIG. 6.—Culpeper County, Va.—Partial representation of activities of the county agent, showing character, distribution, and centers of organization.

should be directed toward the betterment of all lines of farming supporting the growing of live stock, which even before that time had been the greatest agricultural industry of the county. It was also decided to try to improve home conditions. In the former endeavor, naturally they turned first to the corn crop and sought to improve it in uniformity by selection of seed and in yield through the introduction of more productive varieties and proper cultivation of the crop, for as one farmer says: "Hardly a half dozen men in the county had improved corn." The average yield of the county as reported by the Bureau of the Census for 1900 and 1910 was 23.67 and 21.01 bushels, respectively. The first year only 22 demonstrators with corn were secured. On 95 acres they averaged 48 bushels per acre, a few making over 100 bushels. A part of the regular work has been the continued demonstrations in better methods of corn production each year. The second year 33 demonstrators on 402 acres averaged 70.6 bushels; the third year 49 demonstrators on 274 acres averaged 50.7 bushels; the fourth year 108 demonstrators on 389 acres averaged 65.5 bushels. During those 4 years 212 demonstrators on 1,160 acres averaged 58.7 bushels per acre, or 37.69 bushels above that reported for 1910.

In addition to the demonstrators who followed instructions carefully and were visited by the agent regularly, every year cooperators and farmers on over 5,000 acres have followed the same directions and increased their yields correspondingly, although no visits were made to them.

In 1914 a "five-acre club" of 40 farmers was formed, each one to grow a 5-acre field of corn to determine what amount could be raised on that area. Reports showed an average of 72 bushels per acre. One young man grew 643⅓ bushels, or 128.66 to the acre, on his field. Reports for 1915 are not yet available.

In the beginning of this work a number of farmers would not plant the new varieties of corn; to-day, however, reports from every section of the county as to the men who are using improved seed corn put the increase all the way from 50 to 100 per cent, 10 of these estimates averaging 83.8 per cent. "There has been a big change in the kind of corn. It is harder, more uniform," says a local grist miller. A county commissioner expresses the situation and influence of the work as follows:

> Five years ago I thought just so we had a big chunk of an ear it was all right. To-day I am very careful in the selection of seed corn

**to get the right type, size, etc. This farm never made as much corn before, and I've known it 72 years. To-day in traveling over the county one sees everywhere well-selected ears of corn hanging in the cribs, barns, porches, and kitchens. This was rarely to be seen five years ago.**

Averaging the statements of 10 representative men gives an increase in the yield of corn over the entire county of 22½ per cent. One said: "There might have been 100-bushel yields before in this county, but we never heard of it."

The boys' corn-club work, which was started by the agent the first year, has also been an important factor in the improvement of corn in the county—in fact, the county agent thinks "it is the best part of demonstration work and has done the most good." During the five years 278 boys have enrolled. As the results for 1914 are typical, they are given herewith. Of the 48 boys enrolled that year, 37 reported yields varying from 23½ to 140 bushels per acre, or an average of 75.7 bushels, at an average cost of 22.9 cents. In the five years, 26 boys have made over 100 bushels per acre apiece.

The results of this work with boys in the county have not stopped with the crop itself. Many club members have been able through the money secured from their corn plots to go to high schools and colleges. A prominent principal of a high school says: "As a whole, club boys stand first in average in records made and deportment." Records show that 55 per cent of the prize money received by boys was deposited in bank or invested in something productive, such as land or live stock. Several fathers said: "The influence of this work upon the boys has been good. They are more interested in farming, see and feel there is more to work for, and are staying on the farms." To this a farmer who has had boys in the work from the beginning adds: "It has done the men more good than the boys, because while apparently not paying attention to the boys' corn clubs, they are trying as hard as they know how to beat the crops made."

It has always been the practice of the agent in Culpeper County to follow out a definite plan of work, often mapped out several years in advance. In the interest of more and better live stock, more forage was necessary as well as more grain, and to this end he has conducted systematic demonstration campaigns for the introduction and increase of alfalfa, meadows, and pastures, respectively, through successive years.

What was almost literally a beginning with alfalfa was made in the fall of 1911, since at that time only two patches of this crop were being grown in the county, and they were partial failures. The agent started 2 acres on his own farm, and induced four or five other farmers to do the same thing, in order to learn the best practice to follow. All succeeded. In 1912 these methods were applied to 40 plots, well located, 2 square rods each in size. These demonstrations were visited by farmers from all over Culpeper and a number from adjoining counties, in one instance by 500 men in all. In 1913, 400 acres were sown to alfalfa. In 1914 this was increased to 1,000 acres and in 1915 to 2,000 acres. Alfalfa is not only used alone, but the seed is added to hay mixtures recommended by the county agent and produced by farmers under his instructions.

Probably the most prominent example of the success of alfalfa growing in the county has been the demonstrations on a large dairy farm. In 1915, 67 acres were sown on that farm, and the following statement will show results on only 6 of these acres:

| | |
|---|---|
| May 29, first cutting, 25,955 pounds dry hay; by cash at $16 per ton | $207.66 |
| June 29, second cutting, 25,680 pounds dry hay; by cash at $16 per ton | 205.44 |
| July 30, third cutting, 6,560 pounds dry hay; by cash at $16 per ton | 52.48 |
| Sept. 2, fourth cutting, 18,870 pounds dry hay; by cash at $16 per ton | 150.96 |
| Oct. 2, fifth cutting, 16,500 pounds dry hay; by cash at $16 per ton | 132.00 |
| Total cash receipts | 748.54 |

Total number tons, 46.78¼; 7.797 tons per acre, at $124.75.

Work with meadows was started by the agent the second year, 2,000 acres being sown to grass mixtures adapted to the various soils of the county. These yielded an average of 1½ to 2 tons per acre. One man put 2 acres of an 18-acre meadow under the direction of the agent, and cut more hay from them than from the other 16. One farmer says: "The demonstrators in my locality are making from 2 to 3 tons of grass per acre, and those following ordinary methods 1 ton or less." A real estate man and a loan agent, both well acquainted with the county from traveling over it, say that they see a wonderful improvement in grass, and that there is more grown than ever before.

In 1913 the work with permanent pastures commenced. Nine farmers seeded or renewed 300 acres, under the personal supervision of the agent.

During 1914 and 1915 a large number of pastures have been renovated by the use of methods proven successful. A great many farmers say their pastures will "carry" double the number of cattle formerly grazed on them.

A part of the program for the growing of more feed crops for live stock has been to sweeten the soil by the use of lime and to teach the more judicious use of commercial fertilizers. Available figures show that the shipments of lime into the county have increased from 1,130 tons in 1912 to 6,966 tons in 1915, and during the same time fertilizer shipments show an increase of 4,453 tons, or from 5,167 to 9,620. On all lands which have been limed judiciously, excellent sets of clover will be found growing luxuriantly.

Attention has also been given to cowpeas, soy beans, rye, crimson clover, and rape, especially for grazing or hay. A conservative estimate places the acreage in all these crops at six times that formerly sown.

As mentioned before, the growing of live stock is the principal industry of the county. Cattle easily lead in number, and work with them has been conducted along both dairy and beef lines. After a careful survey of the situation it was decided, since the growing of beef cattle was well under way in the outlying districts away from the railroad, to encourage its development there and assist in increasing dairying where shipping facilities made that industry the most profitable.

In dairying, farmers living near the railroads have been advised to ship milk, while especial attention has been paid to encouraging the production and shipment of cream by those farther away. For this purpose 12 cream routes have been established, running 10 to 15 miles into the country, from the principal shipping points. The census report for 1910 shows that 226,402 gallons of milk and 4,133 gallons of cream were sold in the county. Railroad records for 1915 give total shipments of at least 408,333 gallons of milk and 25,093 gallons of cream, or an increase of 181,931 and 20,960 gallons, respectively. Farmers have been encouraged to keep dairy records, and in this way find the profitable cows in their herds. In 1915, 618 such records were kept. The county agent carries a milk tester with him on his rounds, and shows farmers how to use it.

In the campaign for better beef cattle, each year the agent has assisted a number of farmers in the selection of cattle for feeding, and outlined methods to be followed in the development and care of beef herds. The following report of results in 1914 will give an idea of a year's work in this line: 10 herds were started, 350 steers bought, 150 fattened, and over 1,000 head were cared for directly under the agent's supervision, besides a great many cattle for whose careful breeding and care the agent was indirectly responsible. In all, fully 60 farmers carried on some form of demonstration on this particular project.

The value of better dairy and beef sires is continually held before the farmers, until to-day there are 103 pure-blood bulls, or an increase of over 100 per cent in 5 years. Several cattle breeders' associations and sires' clubs have been formed.

Along with the growing of more corn, an interest in silo building has been created as an important adjunct to both the dairy and beef business. To-day there are 225 silos in the county, while only 15 or 20 were in use when the work began.

Demonstrations were also conducted annually in the growing of more and better hogs. Each year a campaign of this character has been conducted, with special emphasis laid on the value of grazing crops for hog production, instead of feeding corn alone. There is a steadily growing interest in this industry in the county, due to these examples. The number of hogs has increased in practically the same proportion as the number of cattle.

Some work has been done with sheep, resulting in a steady increase in their number. For instance, in 1914 10 flocks were started, due to demonstration influence.

The growing of horses and mules and the introduction of pure-blood stallions and jacks has received attention.

The following records of live-stock shipments show the increase that has been made in its production: In 1912, 248 cars; in 1913, 265 cars; in 1914, 313 cars; and in 1915, at least 424 cars—an increase in 4 years of 176 cars. Live-stock men estimate each car to average $2,000 in value. The increase in value of live stock and its products alone, shipped out of the county, has added nearly $400,000 to its revenues.

More of the county's wheat is sold than of any other crop; therefore demonstrations with it were included in the program of work. No effort has been made to introduce new varieties, but to improve on the quality and yield of those already at hand; also to delay the time of planting because of the Hessian fly. All of these things have been accomplished to a large degree. In the fall of 1913 demonstrations were conducted in many communities in the county. In these demonstrations 500 acres of wheat were sown under the direct supervision of the agent, making an average yield of 25½ bushels per acre, or over twice the average per county that year. In 1915 28 demonstrations harvested an average of 23.4 bushels per acre on 601 acres, some of which was very poor land. Several made over 40 bushels to the acre, the highest yield being 50 bushels. The average for the entire county was 12 bushels. The farmers themselves say that from 50 to 90 per cent of their number are using better seed wheat. In a two-days' trip over the county, covering nearly 200 miles, almost every man met was sowing wheat according to the agent's advice. Millers say that the quality of the wheat is better than formerly, and freer from weed seed.

The results of the work for better homes, more enjoyable country life, and for a more contented and happy people are difficult to put into actual words and figures, but a large amount of work has been accomplished. Some of these lines of work touch the home quite closely, such as the work with poultry, care of home orchards, planting, care, and management of home gardens, saving of surplus food products of the farm for home use, and the better care and keeping of milk, making of home butter, and the saving of meats. Considerable work was also done along the line of installing water and lighting systems in rural homes, the improvement of lawns, the rearrangement of home and farm buildings, and the planning of those about to be erected. With some one of these various lines of work at least a thousand homes were reached.

The poultry industry is encouraged in many ways. Eggs are gathered and marketed in connection with the cream routes. Poultry houses are planned and methods outlined for the care and production of poultry. In 1914 instructions were given on over 50 farms. To-day the poultry and eggs are said to be worth more than all the grain grown in the county.

Work with orchards was begun in 1913, attention being given to the setting out and improvement of the home orchard, rather than to the commercial one. In 1914, 50 men with 3,750 trees, and in 1915, 67 men with 6,000 trees received direct attention. Lists of suitable varieties of fruit and directions for setting out trees, also for pruning and spraying, have been given to many others. The first result accomplished was a reduction of one-half in the price of trees. Many farmers have said that before they started to prune and spray they could not save enough fruit for their own consumption, but now they have enough for home use and some to sell.

The influence of the girls' canning club and home demonstration work has added greatly to the campaign for better living at home. A woman agent was appointed in this work in 1914. Since then nearly 150 girls and many mothers have enrolled. New methods of saving farm and garden products and many labor-saving devices and arrangements in the home have been introduced. Several girls have already been enabled to attend high school and the way has been opened for others to get a better education.

Attention has been given to the problem of organization. In addition to local live-stock associations and sires' clubs already mentioned, community organizations have been given attention. In three communities in the county there are farmers' unions, the principal work of which was the cooperative purchase of supplies. These associations are of assistance to the county agent in his work, and are working with him on many of the problems in which he is engaged. Besides these, five other communities have organized local farmers' clubs or associations and are doing some work in cooperative purchasing of supplies, and generally studying local community problems. Six or seven communities in addition to those already mentioned have some sort of an organization. At these points or centers meetings are held more or less regularly, at which subjects pertaining to agriculture and the general welfare of rural people are discussed. The county agent, as a rule, participates in these meetings whenever it is possible to do so.

A good-roads association was formed in 1913, for the purpose of creating a sentiment for better roads. That this has been done is shown by the fact that to-day there are 69 miles of macadam road and 200 miles of improved dirt roads. All this progress has been made in the past two years.

During the season of 1915 instructions had been given for the entire work on 15 farms, aggregating 3,000 acres. These had been so located and used as to furnish community examples for object lessons. Fifty other farms have received some services of similar sort, but not direct supervision. Many more have been so supervised in previous years. Fields have been laid off, proper rotations established, the general plan to be followed on the entire farm outlined, and the county agent is consulted regarding every operation thereon. Rotations covering 10,000 acres have been started on over 50 farms other than those just mentioned.

The general increase in the prosperity of the county since demonstration work began, or during the past 5 years, is reflected in many ways.

Statements made by implement men indicate that to-day the trade in agricultural machinery has more than doubled itself. The growth in the live-stock industry has increased the sale of fencing alone three or four times over that in 1911. In connection with this industry the saving of manure has been emphasized, resulting in 600 farmers using manure spreaders.

The output of factories for the manufacture of tile for drainage is more than three times as great.

Teachers are better paid. Seven high schools have been erected, and the county schools have had their terms lengthened one or two months. A prominent teacher says: "The most hopeful sign is that in poorer sections they are looking for more productive seed and are following better farm practice. Improved agriculture is in the very atmosphere."

According to a well-informed banker, three-fourths of the farmers are in better condition. A summary of estimates made by representative men from various sections of the county places the returns from farms and the general condition of farmers at 35 per cent better than 5 years ago.

As most of the bank depositors are farmers, the increase in deposits of over $265,000 from July, 1911, to July, 1915, furnishes a reliable barometer of their business. A better showing would have been made on the latter date, except for the fact that wheat was then being held generally for better prices.

According to the records in the office of the county clerk, the personal property of the county increased from $1,532,684 in 1911 to $3,307,894 in 1914, or a gain of $1,775.210.

After 5 years of demonstration work in the county, the judgment of the county commissioners is that there is nothing for which appropriations are made that gives better returns than money spent in this way. Greater results have been obtained each year as the farmers become better educated in the work, and they look for this improvement to continue.

In this county the work has grown constantly and constructively, but there has been no outstanding or enthusiastic public demonstration of this arousing of the county to new life. As mentioned before, it was a prosperous county to begin with, and the type of agriculture was good; however, the entire rural life and the business interests of the county have been beneficially touched by this educational activity and the services rendered through the county agent.

Compared with the example given in Christian County, it is possible that Culpeper does not stand out as such a great example of how a whole county demonstrated, but the effect of the education and of the service rendered is to be found there in even a greater degree. No better evidence of the value of this educational service could possibly be given than the fact that the work has continued steadily, without interruption, is held in highest esteem, and the man in charge of it has received recognition, not only from the college of his State and the department, but also from the local people.

Two examples have been given; similar work is in progress in hundreds of counties in both the Southern and the Northern States.

# KARAKUL SHEEP.

By F. R. MARSHALL, L. L. HELLER, and V. O. McWHORTER, *Animal Husbandry Division, Bureau of Animal Industry.*

THE production of Persian lamb fur in the United States appears to be feasible and to present commercial possibilities. The fur now comes to this country through Europe from Central Asia, where it is produced by the sheep known as Karakul.[1] Since 1909, 54 of these sheep have been brought to the United States. The importations consisted chiefly of rams, which have been mated with ewes of other breeds to determine what class of the readily available ewes are most valuable for mating with Karakul rams to produce lambs having good skins. Flocks owned in Texas, Kansas, and New York now comprise over 1,000 head of sheep having one-half or three-quarters Karakul blood. Besides these grades there are 60 rams and ewes that are either imported or descended from imported stock.

Much is yet to be learned about the breeding and management of Karakul sheep in the United States, but their successful rearing seems likely to be accomplished, especially in areas of higher elevation and drier climate.

The fur commonly known as Persian lamb is taken from the young Karakul lambs. The common practice is to kill the lambs when but a few days old, as the character of the curls deteriorates with greater age. The skins of prematurely born lambs have value as furs, but ewes are not sacrificed to secure them.

The Persian lamb fur used in the United States is produced in Central Asia, chiefly in the Khanate or principality of Bokhara, situated between Turkestan on the north and Afghanistan on the south, though a few Karakul sheep are kept in the territory adjoining Bokhara. The term "Persian" seems to have become attached to this class of fur because of the fact that at one time it was sent to Europe through points in Persia. There are some Karakul sheep in Persia, though the stock common to that country and known in America as Persians are not valuable as fur producers.

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[1] This name, sometimes written Caracul, is pronounced Kar-a-kool, with the major accent on the last syllable.

In 1909, 15 head of Karakul sheep were imported to the United States from Bokhara by Dr. C. C. Young, of Texas. The results obtained with these sheep and their descendants and with others imported in 1913 and 1914 have made it appear that the production of Persian lamb fur can be made a profitable commercial enterprise in the United States. Because of the distance to Bokhara and other matters peculiar to that country which present difficulties to importers, it is improbable that the number of Karakul sheep brought to the United States will be sufficient to bring their prices within the reach of many farmers or sheep raisers.

The future of the industry in this country depends very largely upon the results obtained by mating Karakul rams with ewes of other breeds. Recognizing this fact, in 1911 the Animal Husbandry Division began experiments planned to show the value of lambs from Karakul sires and dams of a number of well-known breeds. This project also included the rearing of stock from successive matings of Karakul sires with ewes having various proportions of Karakul blood. Serious delays were occasioned by the fact that the division owned none of the Karakul sires used. In 1911 and 1912 two crops of half-bred Karakul lambs were born and two sets of three-quarters-bred Karakuls in 1913 and 1914. All but four head of the sheep retained in the experiment were lost through the burning of the barn at the experimental farm in March, 1915. Though incompleted, the project has yielded useful information which is herein reported, together with a discussion and summary of Karakul breeding in the United States and features of the industry in its native home.

## COMMERCIAL FURS PRODUCED FROM SHEEP.

### CLASSES OF FURS.

The furs which are taken from young lambs are known as Persian lamb, Astrakhan, Broadtail, and Krimmer. In recent seasons ladies' coats made from skins similar to Astrakhans have been sold as "Karakuls." Persian, Astrakhan, and Broadtail skins are all black in color, but vary in the character of curl. Persians have the most pronounced. most uniform, and tightest curls and the greatest value. (See Pls. XXXIX, XL, XLI, XLIV, XLV, and XLVI.) Astrakhans have longer hair, the curl is much more open, and usually has less luster or gloss than the Persian (Pl. XLVII). The "Moirée" Astrakhan is a very soft, light skin, having straight hair, but with a very pronounced satiny luster (Pl. XLII). Broadtail skins are taken from lambs prematurely born. Valuable skins of this class are soft and pliable, as well as being very light in weight. Their hair is shorter than on Persian skins, and instead of being tightly curled exhibits a very attractive wavy pattern (Pl. XLIII). Krimmer is a gray fur produced mainly in the Crimean peninsula, hence its name.

In each of these classes of lambskins there are varying grades. It can not be said that all Persian skins are more valuable than all Astrakhans, though they average considerably more and include the most valuable lots. With the exception of Krimmer the above skins are produced mainly by Karakul sheep reared in Bokhara.

### VALUES OF PERSIAN LAMBSKINS.

The demand for Persian lamb fur has broadened greatly in recent years. Between 1895 and 1913 prices have increased about 180 per cent. In occasional seasons (including that of 1914–15) values have fallen, not through changes in fashion or popularity of this fur, but as a result of less liberal expenditure on the part of the class of people who buy articles of this class and value. The serviceability and attractiveness of Persian lamb fur, together with the diminishing supplies of the natural furs, render a return of lower values doubtful and a further advance not unlikely.

Some idea of values of various grades of skins can be obtained from the prices of those shown in the illustrations. The values of April, 1915, were assigned by a leading New York firm of fur dealers. As stated, fur values at that time were unusually low, and the values then quoted are useful chiefly to show the differences in the various skins.

**Plate XXXIX. Imported skin, valued $10, April, 1915.**

**XL. Skin from lamb having two crosses of Karakul blood, grand dam being Barbados. Valued $10, 1913, and $6, April, 1915.**

**XLI. Skin from lamb having two crosses of Karakul blood, grand dam being Lincoln. Valued $7, April, 1915.**

**XLII. Imported skin, valued $5, April, 1915.**

**XLIII. Skin from lamb having two crosses of Karakul blood, grand dam being Barbados. Valued $5, April, 1915.**

**XLIV. Five-day-old skin from lamb having two crosses of Karakul blood, grand dam being Cotswold. Valued $4.50, April, 1915.**

**XLV. Two-day-old skin from lamb having two crosses of Karakul blood, grand dam being Barbados. Valued October, 1913, $7.50; April, 1915, $4.**

**XLVI. Skin from lamb raised in Texas, having two crosses of Karakul blood, grand dam being Lincoln. Valued $4, April, 1915.**

**XLVII. Skin from lamb sired by Karakul, dam being Cheviot. Valued $3, April, 1915.**

**XLVIII. Two-day-old skin from lamb sired by Karakul, dam being Merino. Of no value from a furrier's point of view.**

## THE KARAKUL SHEEP.

### NATIVE HOME AND DEVELOPMENT.

The Karakul sheep takes its name from Kara Kul (black lake), a village in the eastern part of Bokhara, a Province in Central Asia. This Province, which is a protectorate of the Russian Empire, comprises about 85,000 square miles.

A large part of the area has an elevation of about 8,000 feet. About one-tenth of the country is used for crop raising by the aid of irrigation. In all parts of Bokhara the summers are very hot and dry. In the lowlands winter temperatures of 20° F. are common, while the highlands, where sheep are more numerous, have still lower temperatures and a longer winter season. The best feed occurs from the middle of March until the middle of May, after which vegetation rapidly dries up. The areas on which the sheep run in winter are frequently covered with snow and in some years sheep losses are heavy. In more recent years, and since the increase in values of lambskins and sheep, some feed is stored for winter use. In moving from place to place for feed and water the flocks travel considerable distances, rendering it impracticable to furnish shelter or large supplies of feed.

The number of sheep in this territory is estimated at from 3,000,000 to 4,000,000, and the annual exports of lambskins are known to average about 1,500,000. The skins are collected by dealers and traders, most of them to be resold at the annual summer fair at Nijni Novgorod, in Russia, 272 miles by rail east from Moscow. About 166 skins are packed into a bale and ordinarily not assorted for export to various countries until after becoming the property of the dealers, largely Germans from Leipzig, who purchase them at Nijni Novgorod. In Leipzig the skins are sorted into uniform lots for export to various parts and a few are also dyed, though as a rule the dyeing is not done until the skins reach the firm by which they are to be made up for wearing apparel.

The increasing popularity of Persian lamb fur in various countries caused a steady advance in prices of raw skins. In New York imported dyed skins of the first class sell in small lots at from $12 to $20 each, though there are many skins imported which command as low as $3. There is no duty upon undressed skins, while those not advanced further than dyeing pay 30 per cent duty. Skins of prematurely born lambs vary in value from 25 cents to $9. The average wholesale value of all skins sold at Nijni Novgorod in 1913 was $6.25.

It appears that the foundation of the present fur-bearing sheep was the early native Arabi. The blood of the Arabi has been disseminated and in combination with that of the black Danadar produced the sheep kept in the vicinity of the village from which the Karakul derived its name. With the rapid rise in values beginning in 1895 there was incentive to increase the size of flocks by purchase of ewes available from surrounding territory but low in fur quality. The offspring of such ewes, by rams from the older flocks, had marketable skins. With no reservations of select animals for raising rams, and with the general custom of killing the ram lambs while retaining the ewes, the value of the sires seriously declined. It has been stated that the fur quality of the Bokharan flocks was in danger of being lost. Steady high values for skins prompted an effort toward preservation of the better stock and in some degree arrested deterioration. It would seem, however, that with a system of matings whereby the sire and dam of each lamb are known, and careful study made and records kept of each lamb so bred, the qualities may be fixed and enhanced, as has been done with many other characters of sheep.

The Karakul sheep of Bokhara that yield the Persian lamb fur can be said to represent a type, although those Europeans who have studied them state that there is considerable variation within flocks as well as within lots of skins sent to market. The use of single rams and recording of parentage of lambs raised is practiced very little if at all. There are no books of record. It may, therefore, not be technically correct to speak of these sheep as a breed in the sense of the best use of the word. However, in the appearance of the lambs' coats these sheep have a character of value not found in other sheep and which they transmit to their offspring. In the lack of a term to fit accurately the Karakuls it will not be amiss to refer to them as a breed, using the word in a liberal sense.

### APPEARANCE AND CHARACTERISTICS.

The Karakul is a sheep of medium size, with black face and legs, and a long, coarse fleece of some shade of gray. The rams are horned and the ewes polled, though occasionally polled rams and horned ewes occur. The body of the Karakul has not a close resemblance to that of any of the breeds well known in America. It has the narrow back and flat sides common to sheep not bred for meat production. A depression back of the shoulders and a high loin are usually present. The rump is of itself quite drooping, and a very distinctive character is the shape and size of the tail. This is not the long tail of the European breeds, neither can the Karakul be said to belong to the fat-rumped class common in Asiatic countries. It is described as "broad-tailed." Being quite short and very broad next to the body, fat accumulates in this part and forms a triangular development that may weigh 5 or 6 pounds, extending toward the hocks. The lower part of the tail is frequently sharply curved. This broad-tailed feature is only slightly developed in the lambs at birth, becoming pronounced in mature animals. Other peculiar features are shown in the head. The face is narrow and decidedly Roman-nosed. The ears are small, pendulous, and set somewhat low. The fleece is from 6. to 10 inches long, decidedly coarse, and at the outer ends lying in separate small locks. (See Pls. XLIX and L.)

In some specimens of the breed there is a noticeable amount of finer and softer wool near the skin. This undercoat is not desired in breeding animals, as it is stated that the lambs having the best curl and luster come from parents having the least fine wool. Karakul fleeces are commonly sold as carpet wool. A pronounced glossiness of the hair of the face and legs and evidence of curls on these parts are regarded as indications of ability to produce lambs with skins of good luster and curled all over.

The Karakul, as a result of its environment, is adapted to areas of extreme temperatures and limited rainfall. Lambs dropped in Maryland in August have shown marked thrift and a rapid growth which is less marked after three months. This is not surpsising when it is considered that the average mature weight is not much above 100 pounds for ewes. Reports from Texas parties who have raised imported, native-born, and grade Karakuls state that they were better able to resist cold and storms than sheep of other breeds. The conformation of the Karakul does not commend him as a mutton producer. While the hardiness of the mature stock and the size of the lambs are desirable qualities, the use of Karakul blood to impress them upon a flock bred for mutton would sacrifice a good deal of the desired conformation and would not be advisable under conditions affording reasonable feed and care. In flocks of mutton type which must necessarily be kept upon range subject to extreme conditions, careful use of Karakul blood might give results of value apart from consideration of the fur value.

## KARAKULS IN OTHER COUNTRIES.

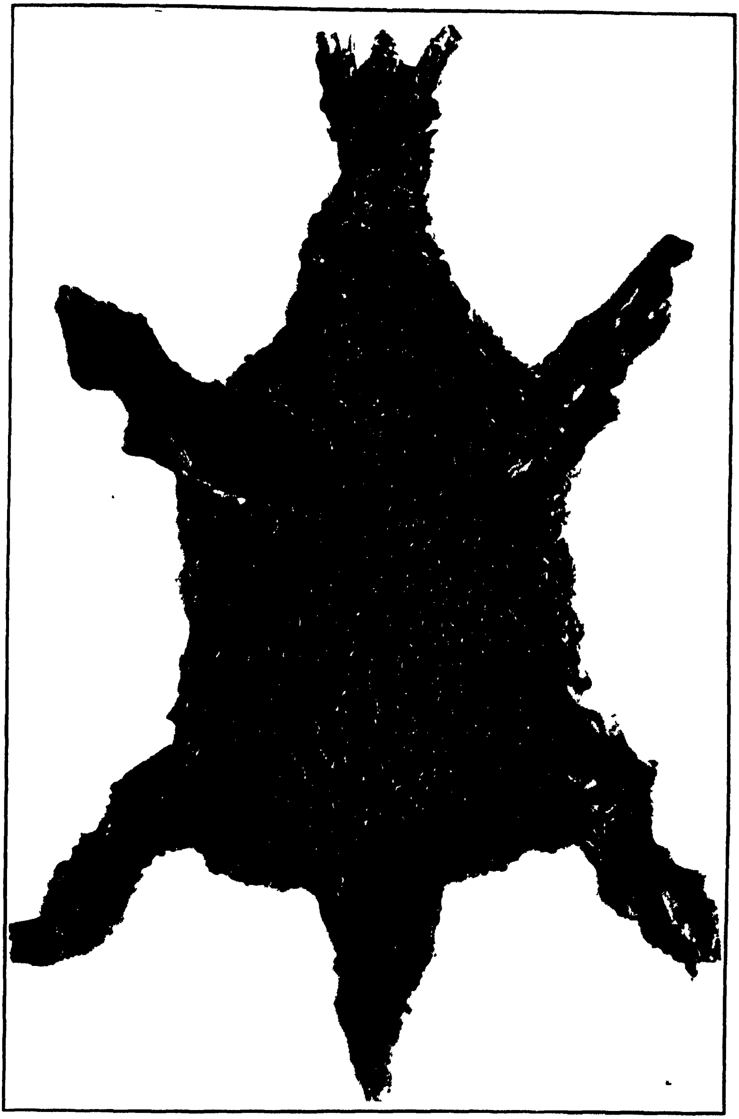
There would seem to be an opportunity for careful and experienced breeders in other countries having conditions suitable to the Karakul sheep to improve the breed greatly and to establish the Persian lamb fur-producing industry in their localities. The possibilities of large profits from breeding fur-bearing sheep has, in fact, resulted in active efforts to establish the industry in several other countries.

Despite the difficulties of securing possession of good sheep and of removing them from Bokhara, considerable numbers have reached distant parts of the world. From 1907 to 1910 annual exportations averaged 1,577 head to Asiatic Russia, 418 to European Russia, and 221 to western countries; some of those enumerated as going to Russia reached other countries. Flocks of Karakuls have been established in European Russia, Roumania, Germany, Austria, Hungary, Argentina, German West Africa, British South Africa, Scotland, Canada, and the United States.

Though no detailed records of results are available, it is claimed that good skins have been produced by Karakul sheep and their descendants of unmixed breeding in all of these countries. In South Africa attention appears to have been centered less upon fur production than upon the value of Karakul blood in better adapting the native sheep for "the drought-ridden districts of the northwest Cape." In others of the countries named the sheep have been largely used in breeding experiments planned to show what types of sheep already at hand can be mated with Karakuls with the greatest promise of producing valuable skins. It is as yet impossible to forecast the extent of future supplies of skins that may be produced outside of Asiatic Russia.

## KARAKULS IN THE UNITED STATES.

Only three lots of Karakul sheep have reached this country. These were all imported by Dr. C. C. Young and comprise a total of 31 rams and 23 ewes. A number of the rams have never been satisfactorily tested as to their ability to sire lambs with valuable skins, and, as would be expected even in a breed of fixed type, some individuals have proved to be much stronger breeders than others. A number of the rams together with some of their descendants have been sold to persons in Prince Edward Island, Canada, and for a number of others it is impossible to secure definite information as to the number of their progeny. So far as can be ascertained, the imported animals and the descendants now in this country are in the hands of 8 or 9 persons in the States of Texas, Kansas, and New York, who reported in May, 1914, a total ownership of 33 rams and about 30 ewes. The rams have been largely used upon long-wool ewes, and there are over 1,000 head of half and three-quarters Karakul



A SKIN CLASSED AS PERSIAN LAMB (IMPORTED).

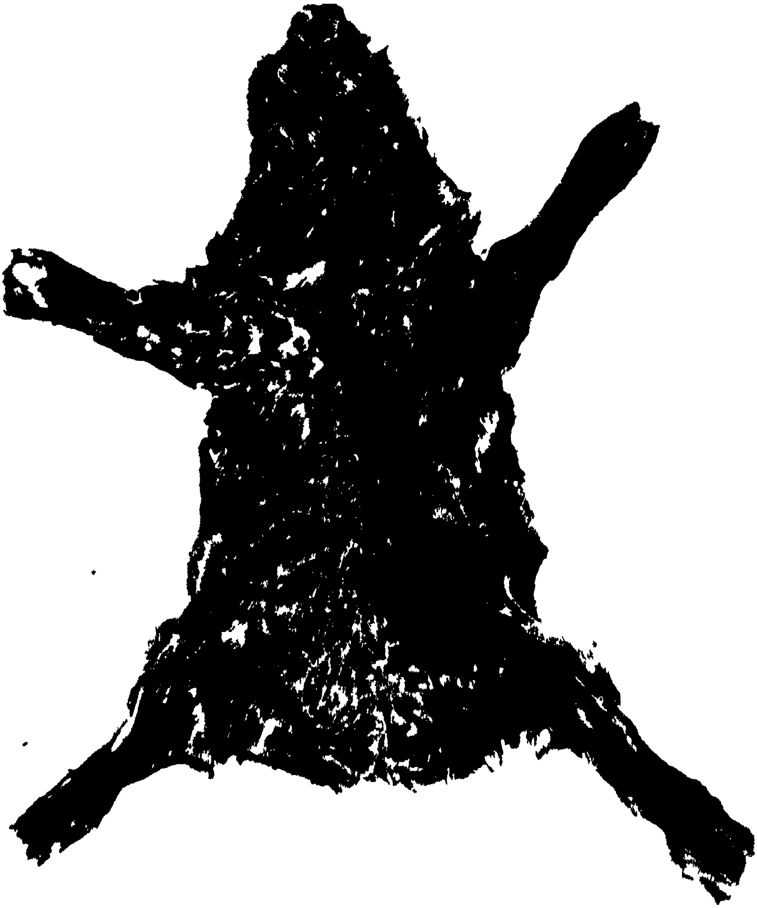
The tight, even curl and fine luster are main factors determining its value.

SKIN CLASSED AS PERSIAN LAMB.

Curl is tight and lustrous, but larger than that shown in Plates XXXIX and XLI.

SKIN CLASSED AS PERSIAN LAMB.

The lack of even curl over neck depreciates its value.



SKIN CLASSED AS "MOIREE" ASTRAKHAN (IMPORTED).

Note unusual luster and soft velvety appearance peculiar to its type; also absence of curl.

SKIN CLASSED AS LOW-GRADE BROADTAIL.

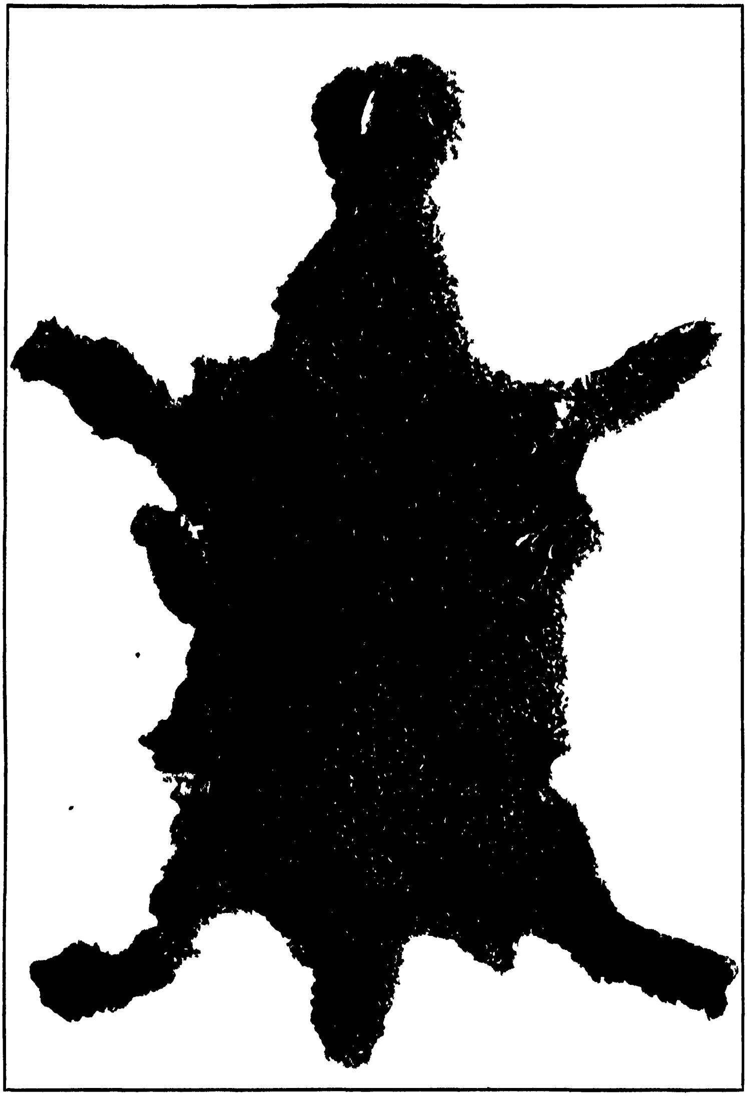
In place of the tight curl desired in the Persian lambskin, a wavy, lustrous, and velvety pattern appears. This pattern should extend uniformly over shoulders and belly and not be limited to back, as is the case of this skin.

SKIN CLASSED AS LOW-GRADE PERSIAN LAMB

Although it is lacking in luster and tightness of curl the uniformity of curl over entire body is extremely desirable

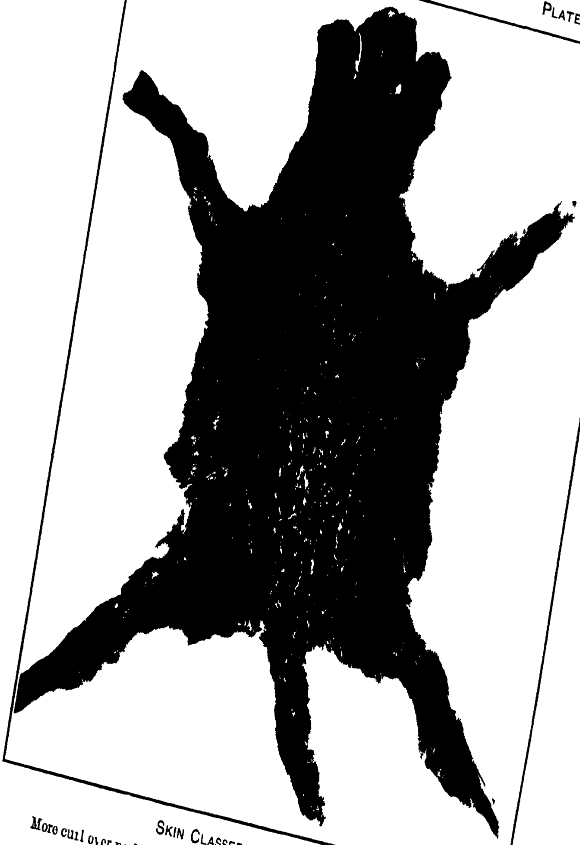
SKIN CLASSED AS LOW-GRADE PERSIAN LAMB.

The tightness of curl and brightness of luster are noticeably absent.



SKIN CLASSED AS LOW-GRADE PERSIAN LAMB.

The lack of tight curl and the poor luster are objectionable features.



SKIN CLASSED AS ASTRAKHAN.

More curl over neck, shoulders, and belly of this skin would increase its value.

THIS SKIN HAS NO COMMERCIAL VALUE IN THE FUR MARKET.

It has neither curl nor luster and shows a dead, doggy appearance.

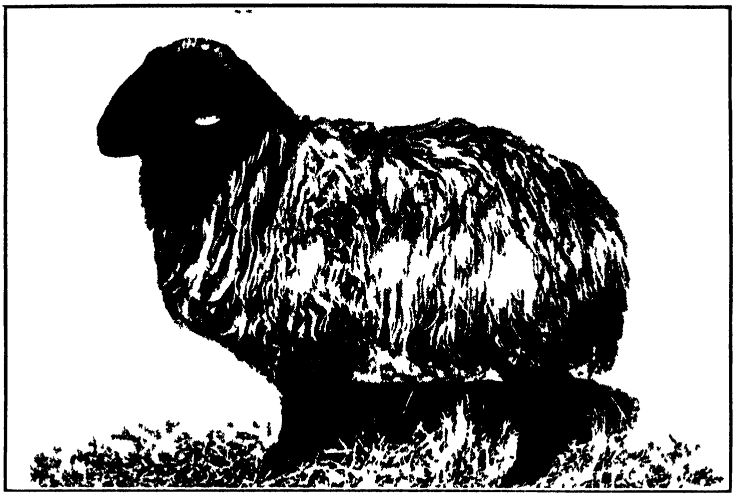


FIG. 1.—IMPORTED KARAKUL RAM USED BY BUREAU OF ANIMAL INDUSTRY AT ITS EXPERIMENTAL FARM, BELTSVILLE, MD., IN 1913.

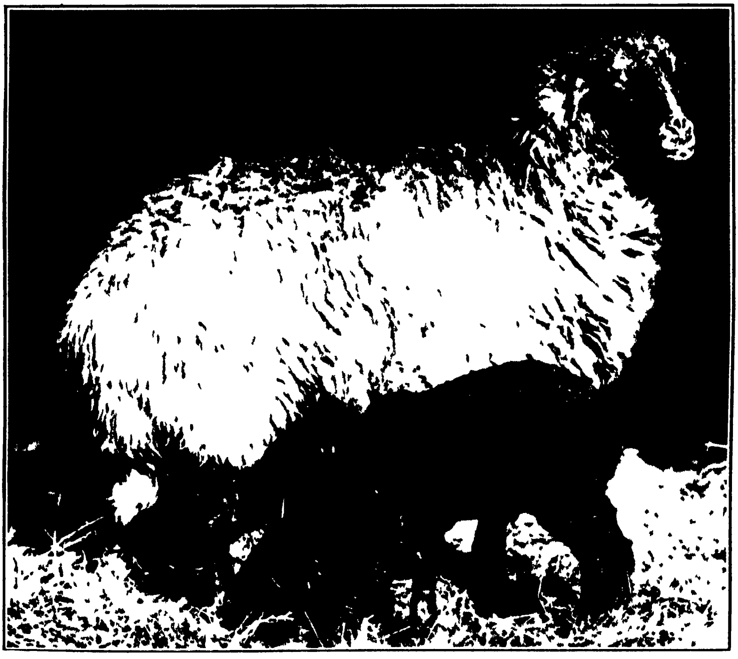


FIG. 2.—VERY YOUNG KARAKUL LAMB, SHOWING DESIRED TIGHT, UNIFORM, AND LUSTROUS CURL, EVENLY DISTRIBUTED OVER ENTIRE BODY.

The ewe is an imported Karakul.

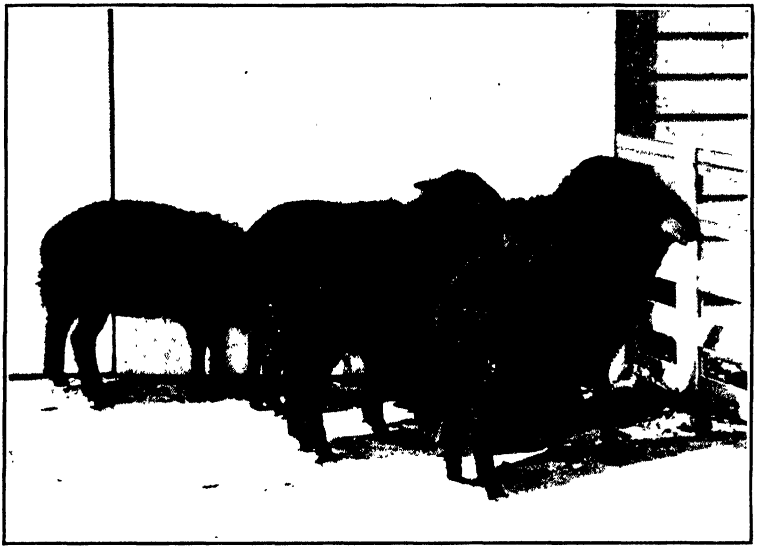


FIG. 1.—LAMBS 6 WEEKS OF AGE.

The loose and open curl, not characteristic of Karakul lambs at birth, is clearly noticeable.

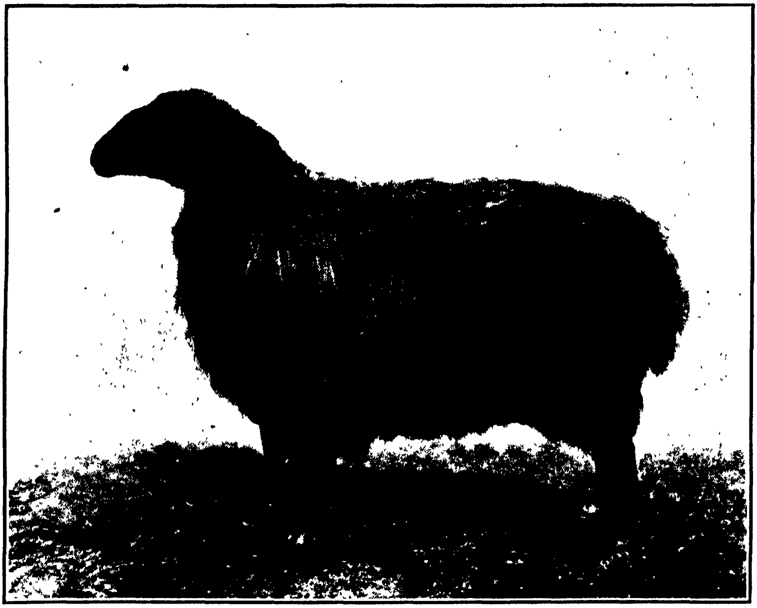


FIG. 2.—THE COARSE AND HAIRLIKE FLEECE SHOWN ON THIS EWE IS FREE FROM UNDERWOOL AND MUCH SOUGHT AFTER BY KARAKUL BREEDERS.

ewes and rams in this country. With further crossing these ewes should prove valuable as producers of fur-bearing lambs, and at some later time, of breeding rams. The present value of the grade Karakul rams from the standpoint of fur production can safely be ignored.

Owing to the wide demand for the small number of Karakul rams available, very high prices are asked. In the cases of rams found to be strongly prepotent in the transmission of fur qualities the high prices can be easily returned in the value of the offspring. The probability of such prepotency in imported males or descendants of imported stock is not sufficient to warrant very high prices for rams of untested breeding qualities.

Under common farm conditions Karakuls and grade Karakuls have proved healthy and vigorous, though there are indications that moist sections and low altitudes may, directly or indirectly, cause losses in both lambs and mature sheep. Although climate would seem to have no direct effect upon the character of the skin of a newly born lamb, persons proposing to breed Karakuls should exercise caution in the selection of a location.

## BREEDING METHODS WITH KARAKULS.

### USE OF KARAKUL RAMS WITH EWES OF COMMON BREEDS.

The number of Karakul rams imported into the United States has been considerably in excess of the number of ewes. Much reliance has been placed upon the prospect of securing valuable skins from lambs sired by Karakul rams and out of ewes of other breeds. Ewes of the longer and coarser-wooled breeds have appeared most likely to be of value in such crossing. While some skins of value have been secured from first-cross lambs, the advantage of as much as possible of Karakul blood in the dam is apparent. Black-Faced Highland ewes are reported as having furnished a useful cross, though no ewes of this breed were used in our experiment. Cotswold and Lincoln ewes have been more largely used.

Of eight skins taken from lambs produced by Cotswold ewes to the service of Karakul rams, three were valued at $1 in the raw state, although all were black and had considerable curl. The same statement can be made of practically all first-cross lambs from Karakul sires. A skin may be black and have curls and yet have little value because of the lack of luster and the poor style of curl.

Six skins were procured from lambs produced by Cheviot ewes to the service of Karakul sires. One of these was valued in the raw state at $3 and another at $1. (See Pl. XLVII.)

Of five skins from lambs of Merino ewes and Karakul sires, none had sufficient fur value to repay the charge of 50 cents per skin for dyeing. These skins were particularly poor in luster and the character of curl was still poorer than in the other crosses. (See Pl. XLVIII.)

The sire of most of the lambs referred to above was a particularly good individual, though he had never been used sufficiently upon Karakul ewes to afford a measure of his ability to sire lambs with valuable skins. The poor results obtained by using Cheviot and Merino ewes would make it appear that none of the fine or medium wooled breeds are likely to have much value in the production of fur-bearing lambs. Though still inferior, the distribution and style of curl upon the skins of lambs from Cotswold ewes was superior to that in the other two crosses as well as in the Barbados cross discussed later.

From the service of the best of the two rams used in the first crosses, 59 lambs were obtained from Barbados ewes. The Barbados has a short, rather stiff, and hairy coat, and it was thought might afford a satisfactory means of utilizing the Karakul rams. From these 59 cross-bred Karakul-Barbados lambs, 33 ewes were raised. None of the skins from the remainder of the lambs had any fur value. Some skins devoid of curl had a pronounced luster, but in none was the curl a close approach to what the trade demands even in the lower grades of skins.

### HALF-BRED KARAKUL EWES AS PRODUCERS OF FUR LAMBS.

Even though the lambs of the first cross from Karakul sires should not themselves yield valuable fur, they may be expected to have extra value as breeders. In the spring of 1913, 15 half-bred Karakul-Barbados yearling ewes were bred to a second imported Karakul ram. These ewes produced 18 lambs in the following August, of which 7 ram lambs and 1 ewe lamb were killed and their skins, after dressing, ranged in value from 50 cents to $10 (basis of October, 1913, prices), averaging $4.70 each. In the spring of 1914 the same lot of Karakul-Barbados ewes produced 25 lambs sired by a third imported Karakul ram. There is, apparently, considerable variation in the prepotency of individual Karakul rams, as the second lot of lambs of three-quarters Karakul blood were much inferior to the first lot from the same ewes. Feed and condition of the ewe may be factors in controlling the character of the lamb's skin, but although the ewes were bred quite soon after their first lambing their condition or treatment could hardly be held to explain the difference in appearance of the lambs of the first and second crops. Nine rams and 1 ewe of the 1914 lot of three-quarters Karakul and one-quarter Barbados lambs were killed. Of these 10 skins, the 2 best ones were valued at $1 and $3. A group of the ewe lambs having three-quarters Karakul blood are shown in Plate L. A few of them had skins somewhat superior to those of the male lambs killed. These ewes were to have been mated in the spring of 1915, but were destroyed in the burning of the sheep barn on March 31.

In the spring of 1914 a half-blood Karakul-Cotswold ewe dropped a lamb of three-quarters Karakul blood, the skin of which was valued at $4. (Pl. XLIV.)

It is altogether reasonable to expect a flock of ewes well graded up by use of successive Karakul sires to prove satisfactory as producers of marketable skins.

A Texas breeder who has used Karakul rams upon Lincoln ewes, in 1914 had 225 half Karakul ewes which had been bred to Karakul rams. Twenty skins from lambs of half and three-quarters Karakul blood were valued by a New York firm in May, 1914, at an average of $4.25, 1 being then valued at $7 and 7 at $5 and over. In 1915, 23 skins were taken from three-quarters-bred rams that died at birth or could not be reared. This lot was appraised at an average of $3.25 each on the basis of the 1915 market. Five of the lot were each worth $5 or over, and 3 below $2. Photographs of some of these skins are reproduced in Plates XLI and XLVI.

## BREEDING FROM HALF-BRED KARAKUL RAMS.

Since information has been distributed as to the apparent possibilities of producing Karakul lambs in the United States, considerable interest has been shown in the use of rams having only half Karakul blood. This interest has in some cases been stimulated by owners of such stock. The scarcity and high values of imported animals or of rams descended from imported rams and ewes is prohibitive to most persons. Because the half-blood ram has a fleece of dark color and with noticeable curl, or waviness when older, he appears to the novice as suitable for use in breeding.

Reports have also appeared stating that the offspring of such rams bred to long-wool ewes had fleeces that were black and curly. Such statements are technically correct but dangerously misleading. A lamb's covering may be black in color and also curly, and yet be of no value whatever to the furrier. It is the character of the curl and the luster with the blackness that gives fur value. This is brought out in the illustrations of this article.

In April, 1914, there were produced in our own experiments 4 lambs sired by a ram of one-half Karakul and one-half Barbados blood, from ewes of the same cross and having the same sire as the ram. The lambs were all of the same general appearance as the direct offspring of the Karakul ram and Barbados ewes and none had value for fur purposes. In the spring of 1914, a three-quarters Karakul and one-quarter Barbados ram was bred to 7 ewes, producing 10 lambs. This ram when young showed fur qualities above those of the ewe lamb of the same crop and the skin of which was valued in New York at $10 (Pl. XL). The ewes bred to him were of the first Karakul-Barbados cross. One of them had previously been bred to a Karakul ram and produced a skin valued at $7.50. Another had produced a lamb whose skin was of no value, while the other 5 had not produced lambs. None of the 10 lambs of this cross, which were theoretically of five-eighths Karakul blood, had skins of value. Not much was expected aside from further evidence as to the possible breeding value of rams having only 1 or 2 crosses of the blood of the breed having the qualities desired. A ram having one-half Karakul blood will add to a flock an infusion of the body features which this breed shows and will in a small measure and at low cost improve a flock that is to be later bred up for fur production. There is no prospect of securing marketable skins by breeding half-bred rams to ewes of any class.

## TIME AND METHOD OF REMOVING SKINS.

It is very important that lambs should be killed at the right age in order to give the skins their maximum value. Skins of prematurely born lambs have a peculiar gloss and softness, which does not, however, have a value above that of a good skin born at the normal time. The current idea that Persian lamb fur is secured from lambs removed from ewes prior to the time of natural birth is erroneous.

Our observations show that the value of the skins may often be greatly lessened by allowing the lambs to reach too great an age. The extra weight of the skin from a lamb that has reached an age of 5 days will seriously lower the value. Occasionally a skin will improve in luster during the first few days after birth. Daily observations upon the condition of the skin were recorded for each lamb of the 1914 crop from birth until the skin began to deteriorate in fur value. Although none of these three-quarters Karakul lambs had skins of high value, the changes due to age may be considered as fairly representative of those occurring in lambs producing fur of good quality. In no case was it found that the character of the curl improved after birth. In most cases the curl retained its original closeness until the third day, and in about one-half of the skins it had begun to open on the fifth day, while at the ninth day it had opened considerably. The luster improved in most cases up to the fifth day, the change being most marked in skins having a poor luster at birth. It appears that while some skins may be improved in luster by being left until 5 days old, there is nothing gained in character of curl. In fact, after the third day there is a strong probability of a deterioration in the curl.

The method of removal and treatment of the lambskins should be as follows: Cut a straight line down the belly, and also cut down on the inside of the legs to meet the center line. Do not cut off any part of the skin; leave on the ears, nose, and tail to the tip. Be careful not to make unnecessary cuts. Stretch the skin evenly on a board, fur side down, and dry in a cool place. Do not salt the skin or double it up for shipment purposes. The principal object is to avoid cracking the skin. See that it is properly shaped when nailed down to the board and thoroughly dried before shipping. The skin should not be sun dried. In packing a number of skins the first one should be laid with the flesh side downward. The second should have the fur side downward. The next should be placed like the first, and so on. This prevents the flesh sides from lying in contact with the fur.

# RECENT GRASSHOPPER OUTBREAKS AND LATEST METHODS OF CONTROLLING THEM.

(Pls. LI–LVI.)

By F. M. Webster,[1]

*In Charge of Cereal and Forage Insect Investigations, Bureau of Entomology.*

In this country there is ample evidence that grasshoppers attacked the grainfields of the Indians before the coming of the white man. It is certain that as early as the beginning of the eighteenth century these pests were numerous and voracious in the newly settled portions of the country, notably in New England, some parts of which were literally overrun with them. As the tide of immigration and settlement extended from the east westward the pioneer farmer on newly reclaimed lands has frequently suffered severe, and in many cases disastrous, losses of his crops on account of the inroads that these devastating hordes have made upon them. Thus those most frequently subjected to these invasions often have been financially the least able to withstand the resulting losses. Both in foreign countries and in America the discovery of effective methods of controlling these outbreaks has been an important agricultural problem.

The species of grasshoppers most commonly destructive in the United States are limited to 7 or 8 in number. (See Pl. LI, figs. 1 to 12.) These are the differential grasshopper, the two-striped grasshopper, the Carolina grasshopper, the lesser migratory grasshopper, the pellucid grasshopper, the nonmigratory red-legged grasshopper, the California devastating grasshopper, and the lubber grasshopper. (Pl. LII, fig. 1.) The destructive grasshoppers in Central America and the West Indies occur in destructive, ruinous numbers only in Florida and along the Mexican border, and as no investigations of these have yet been made, they are not included among those considered in this paper.

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[1] Shortly after preparing this paper for the Yearbook, and following a very brief illness, Prof. Webster died, January 3, 1916. He was one of the best known of the older group of economic entomologists and held a high place among those responsible for the present high standing of American economic entomology.—Editor.

At the present time in the United States there are three principal control methods that have been found of practical value: (1) The destruction of the eggs; (2) catching the insects in the field; (3) the use of poisoned baits.

The first method is effective where its use is practicable, but unfortunately local conditions do not always permit of this. Before laying her eggs the female makes a small hole or cell in the ground for their reception (fig. 7). For this purpose it is necessary that the soil be more or less moist and penetrable. In such places the greatest number of eggs are to be found, and from them the insects spread to and overrun adjacent fields. In the Merrimac and Connecticut Valleys, in New England, the required soil conditions are found in the meadows of the farmers located in the river bottoms; in Vermont they are to be found in the pastures and meadows at considerable elevations among the hills. In Florida the most destructive outbreaks occur in reclaimed swamp land, like the Everglades, where the eggs are placed in the ditch banks or along the margin of drainage ditches and canals. In some sections of the West the ditch banks, irrigation canals, and check ridges in the alfalfa fields become so sun dried and baked at the time the grasshoppers are most largely engaged in laying their eggs that it is impossible for them to make the necessary excavations. In these cases they almost invariably place their eggs down among the crowns of the alfalfa plants, from a few hundred to 2,000 in a single crown. It will be noted that in many of these localities, such as the shallow arroyos of

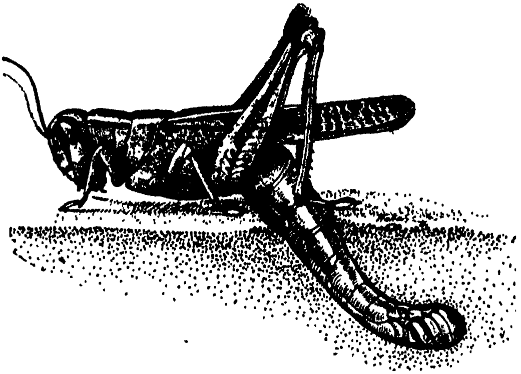
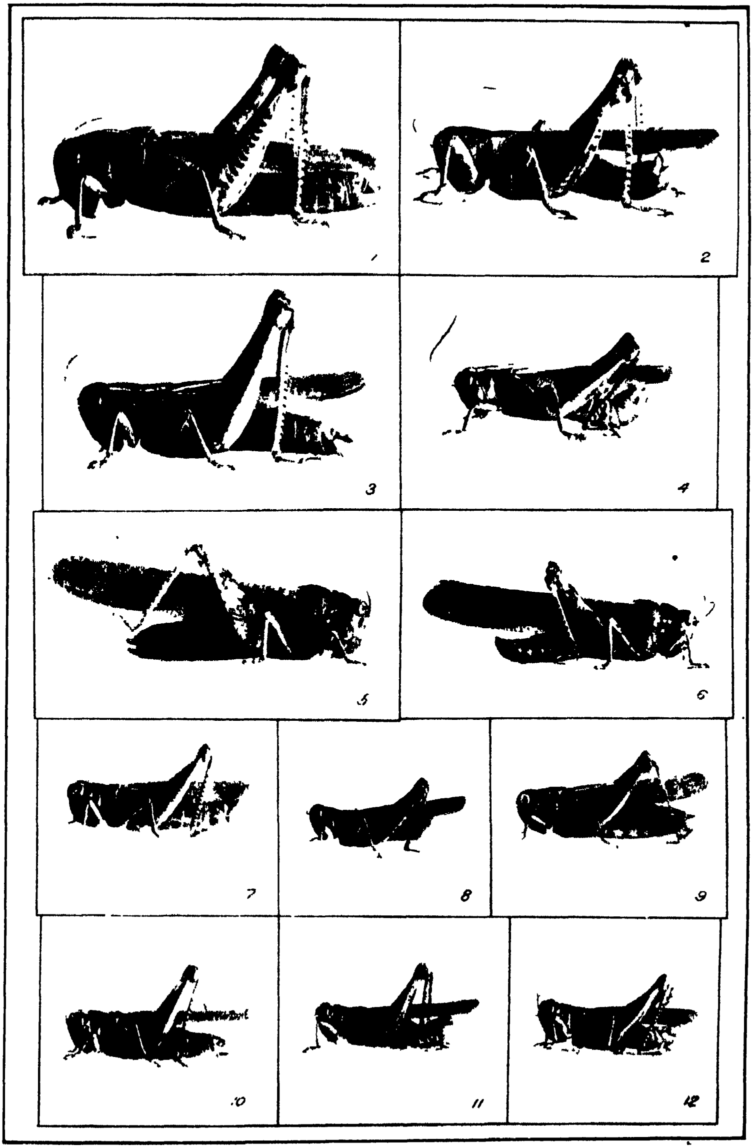


FIG. 7.—Method of egg-laying by two-striped grasshoppers.



1, 2. Female and male, the differential grasshopper, *Melanoplus differentialis*. 3, 4. Female and male, the two-striped grasshopper, *Melanoplus bivittatus*. 5, 6. Female and male, the Carolina grasshopper, *Dissosteira carolina*. 7, 8. Female and male, the lesser migratory grasshopper, *Melanoplus atlanis*. 9. Female, the pellucid grasshopper, *Camnula pellucida*. 10, 11. Female and male, the nonmigratory, red-legged grasshopper, *Melanoplus femur-rubrum*. 12. Male, the California devastating grasshopper, *Melanoplus devastator*.

SOME OF THE MORE COMMON DESTRUCTIVE GRASSHOPPERS OF THE UNITED STATES.

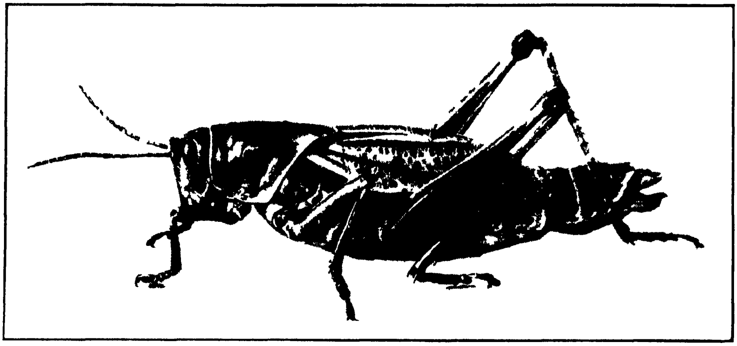


FIG 1 —LUBBER GRASSHOPPER, DICTYOPHORUS RETICULATUS

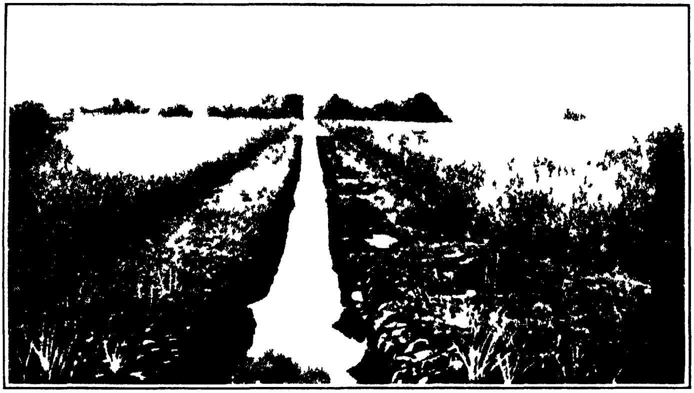


FIG. 2. -DRAINAGE DITCH IN THE FLORIDA EVERGLADES WHERE GRASSHOPPERS DEPOSIT THEIR EGGS

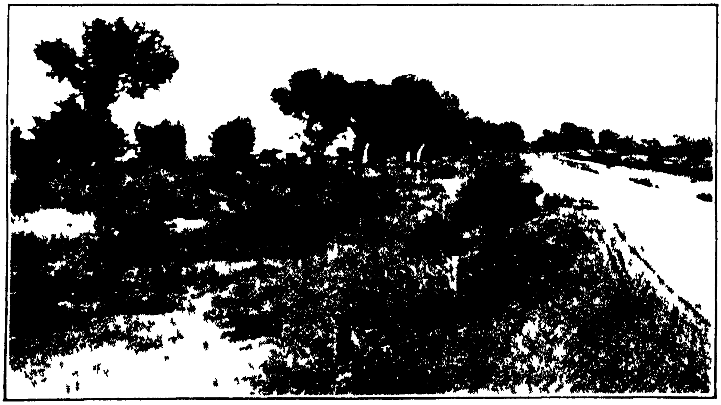


FIG 3.—LOCATION BETWEEN TWO IRRIGATION DITCHES AT TEMPE, ARIZ., FAVORITE PLACE FOR OVIPOSITION BY GRASSHOPPERS.

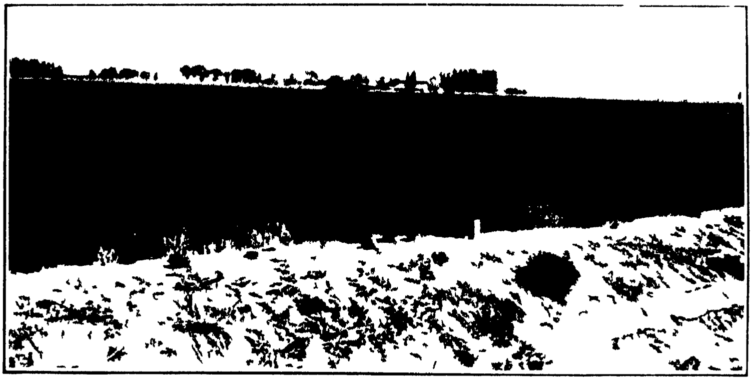


FIG 1 DITCH BANK WHERE GRASSHOPPER EGGS ARE PRESENT IN GREAT NUMBERS ABOUT ALFALFA PLANTS AND AMONG STUBBLE OF WILD OATS

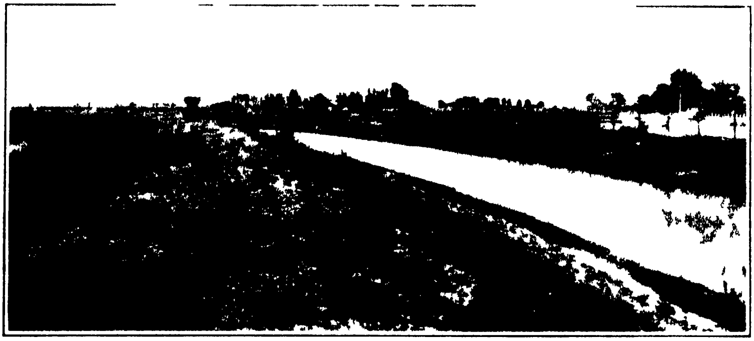
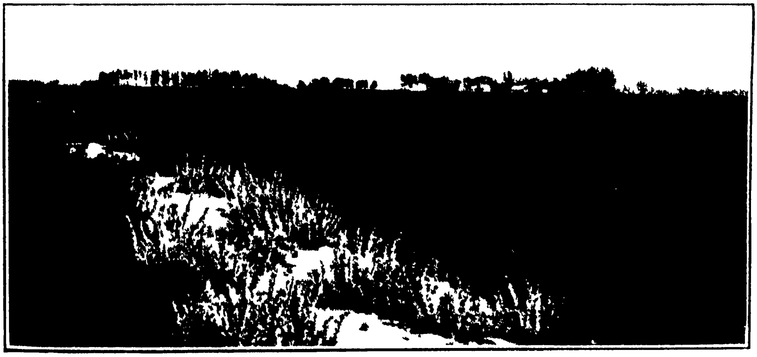


FIG 2 —AN IRRIGATION CANAL RIGHT OF WAY WHERE CROWNS OF ALFALFA PLANTS CONTAIN THOUSANDS OF EGGS PER SQUARE FOOT



FI 3 —AN IRRIGATION CHECK RIDGE AND ALFALFA FIELD WHERE GRASSHOPPER EGGS WERE PLACED AROUND CROWNS OF ALFALFA.

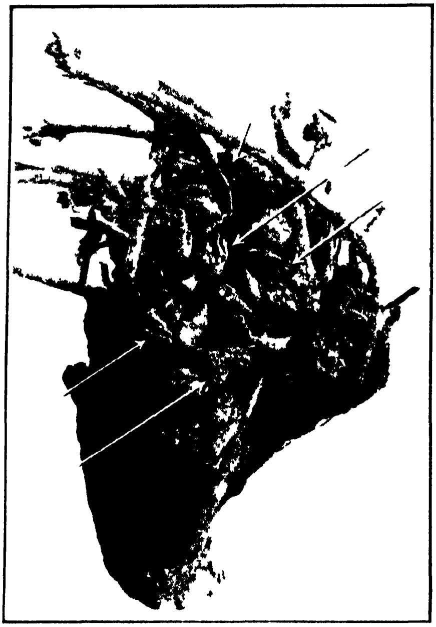


FIG 1 A CROWN OF AN ALFALFA PLANT SHOWING THE EGGS AND EGG PODS DEPOSITED THEREIN BY GRASSHOPPERS

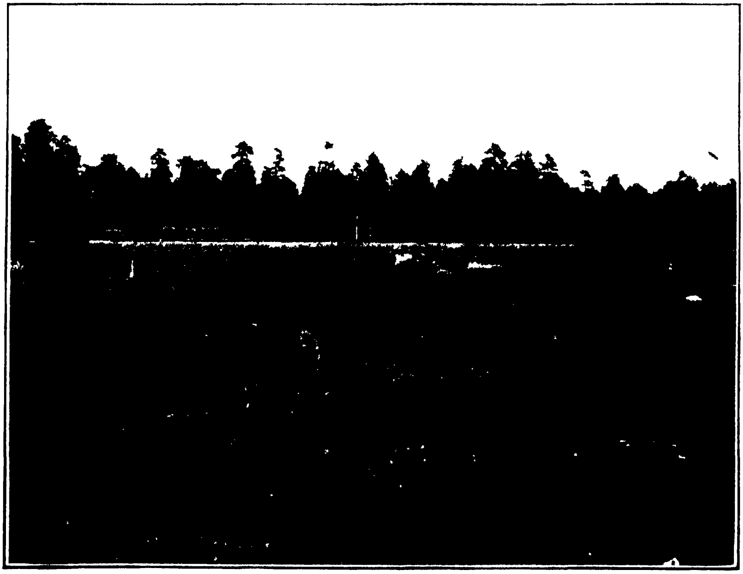


FIG. 2.—HERE THE EGGS WERE DEPOSITED ALONG THESE ARROYOS.

FIG 1 —GRASSHOPPER EGGS LAID IN WASTE, UNCULTIVATED LANDS

Grasshoppers migrate from these lands attacking and destroying adjacent wheat field Wilsons Creek, Wash

FIG 2 —OAT FIELD ATTACKED ALONG THE ROADSIDE MARGIN BY GRASSHOPPERS, BUT CONTROLLED BY USE OF POISONED BRAN BAIT

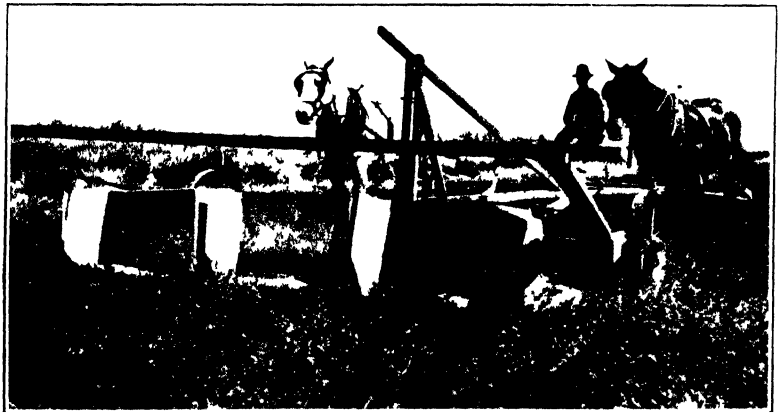


FIG 3 —A COMBINATION OF THREE SMALL HOPPERDOZERS ATTACHED TO WHEELS IN A MANNER TO BE PUSHED BY HORSES INSTEAD OF DRAWN BY THEM.

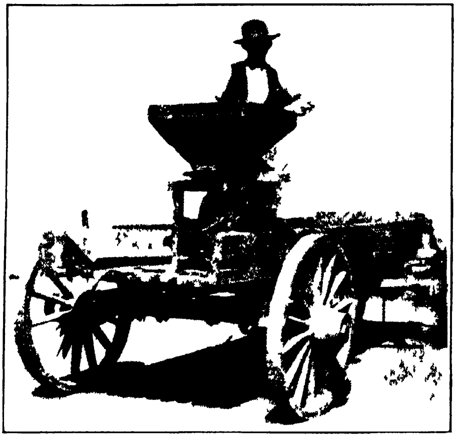


FIG. 1.—BROADCAST GRAIN SEEDER ATTACHED TO WAGON USED IN SOWING POISONED BRAN BAIT

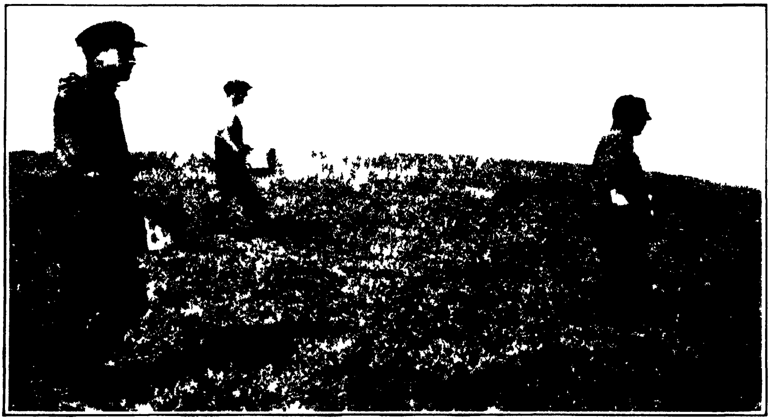


FIG. 2.—SOWING POISONED BRAN BAIT BROADCAST IN TREATING GRASSHOPPER-INFESTED FIELDS IN VERMONT.

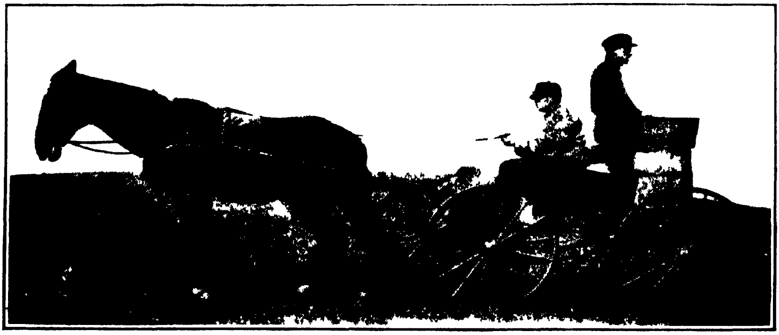


FIG. 3.—SOWING POISONED BRAN BAIT FROM A BUGGY IN TREATING MEADOWS TO DESTROY GRASSHOPPERS IN NEW HAMPSHIRE.

New Mexico and Arizona and the waste lands of Idaho, Washington, and other Northwestern States, disking, shallow plowing, and harrowing in fall or early winter as a means of destroying the eggs are impracticable on a sufficiently large scale to be worth while. Attempts to reach the eggs by handwork, such as digging up the soil, are of use only in gardens or on truck farms. Over a large portion of country, therefore, the destruction of eggs is out of the question, and this method offers only partial relief against the most serious attacks of the pest.

The second method consists of various mechanical devices for the collection of grasshoppers from infested fields and uncultivated areas. Some of the oldest of these are known as "hopperdozers" and vary from a galvanized-iron pan, mounted on runners made of old wagon tires, containing water with a film of kerosene floating on the surface, into which the insects either hop or, striking the back of the pan, are thrown downward and are killed by contact with the kerosene, to a less expensive but perhaps less durable contrivance. Five hundred bushels were collected in the Merrimac Valley, N. H., by the galvanized-iron pan, as shown in figure 8. Plate LV, figure, 3 shows an enlarged modification of one of these so-called hopperdozers made use of in California in 1912, where about 300 bushels of grasshoppers were collected from a field of alfalfa containing about 100 acres.

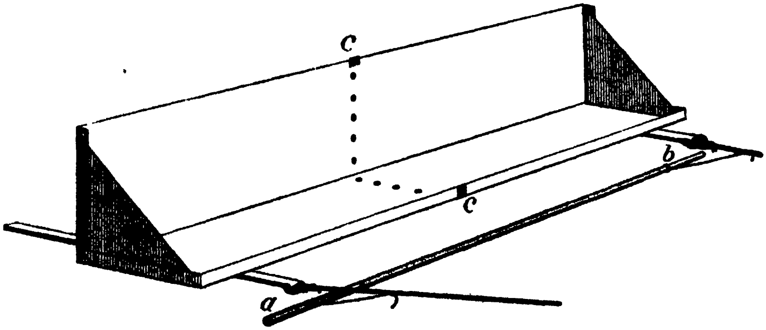


FIG. 8.—Galvanized-iron hopperdozer. Runners of old wagon tire are placed at each end (*a*, *b*), and another in the center (*c*) is turned over in the front and back to strengthen the pan at these points.

Although the hopperdozer will destroy great numbers of the pests, its use is not only tedious and expensive but inadequate to protect crops even where the greatest and most intelligent efforts are put forth. As one farmer expressed it, "For each individual killed it appeared as though an entire family came to the funeral." Other objections to the hopperdozers are that they require for their operation a comparatively level surface unobstructed by trees, stumps, or rocks, and the impossibility of using them in grainfields or meadows where the crop has reached any considerable height. In practice, therefore, their use is largely restricted to pastures and waste lands. The machines, however, should be employed whenever the conditions are suitable for them. Much can be accomplished by their use in forestalling an invasion of the grasshoppers, as they are often more effective before the insects have developed their wings and migrated long distances from their place of hatching.

The third method of fighting grasshoppers—the poisoned baits—was discovered years ago when poisoned bran bait came into use. Later, the so-called "Criddle mixture," named after Norman Criddle, of Manitoba, became popular. Mr. Criddle noticed that grasshoppers preferred fresh horse dung to any form of vegetation; that in the field the grasshoppers made for it from all directions. After they had finished with the dung they attacked the surrounding crop. It was also learned from observations that grasshoppers ate readily any article which had a salty taste. Salt, therefore, was added to the dung to make it even more attractive. The selection of Paris green as a third ingredient was largely a matter of cost and convenience. A mixture made up of 100 parts of horse droppings, 1 part of Paris green, and 1 part of salt found favor, particularly with the farmers and ranchmen of the West. It was mixed with sufficient water to make a thoroughly moist but not sloppy mash, or else the Paris green and salt were put in the water and this poured over the droppings.

Although generally regarded as a great improvement on the poisoned bran bait, because it was less expensive and composed of ingredients that were frequently more easily obtainable, the Criddle mixture did not prove invariably successful. Repeated cases of failure were reported in the use both of the Criddle mixture and the poisoned bran bait. Thus, in spite of years of investigation, the farmer was still without a defense against grasshopper attack upon which he could depend with absolute certainty.

In the fall of 1912 it became clear, both to the entomologists of the Kansas Agricultural Experiment Station and to the assistants connected with the Cereal and Forage Insect Investigations of the United States Department of Agriculture that a serious outbreak of the pest was impending. The experiment station entomologists at once set about to devise an improvement upon the poisoned bran bait that would render it more reliable when placed in the hands of the farmer for use in his fields. It was at this time that the discovery was made by the State officials that the adding of fruit, such as oranges or lemons, to this bait would render it more attractive, and hence add to its value. A grasshopper campaign was instituted and the materials were furnished by the different counties free of charge to the farmers, who mixed the bait and applied it under the direction of the State and Federal officers above mentioned. This work covered an area of about 12,000 square miles and required the use of upward of 1,000 tons of wheat bran and 40 tons of Paris green. The formula used was as follows: Wheat bran, 25 pounds; Paris green, 1 pound; cheap molasses or sirup, 2 quarts; oranges or lemons, 3 fruits. This extensive piece of work resulted in the destruction of 60 or 70 per cent of the grasshoppers, sometimes from 150 to 250 dead grasshoppers being found in a square foot of space. But even with this improved poisoned bran bait cases of failure continued to be reported from farmers, and in some cases even when the bait was prepared and applied by expert entomologists.

Clearly there was something wrong, as these failures could not always be charged to those making the application. For this reason a series of extended field experiments was undertaken covering outbreaks of different species of grasshoppers in New England, Florida, New Mexico, the Imperial, San Joaquin, and Sacramento Valleys in California, in Arizona, and in Oregon, care being taken to secure as wide a variation in existing conditions as possible. (See map, fig. 9.)

In the Merrimac Valley the area treated with the poisoned baits comprised some 700 acres, most of which was in the vicinity of Franklin, N. H., although a field or two were treated in the neighborhood of Concord. Here the Criddle mixture with the addition of fruits was found to be fully as effective as the poisoned bran bait and less expensive, though more difficult to mix and more disagreeable to handle. This last fact led farmers to use a shingle or paddle for its distribution in the fields. When this was done there was a tendency for the mixture to fall in piles or bunches and the results were correspondingly less satisfactory. When spread carefully by hand, the hands being cased in cheap rubber gloves, the best results were obtained. In some instances fields were treated in this way at a cost of 6½ cents per acre, and in one case, in a field of 30 acres that was disastrously affected with grasshoppers, the pest was exterminated at a cost of 11 cents per acre. The poisoned bran bait, made with coarse-flaked bran, was found equally effective but rather more expensive than the Criddle mixture, the cost being from 15 to 20 cents per acre. The mixing, however, was likely to be more thoroughly done. The application was less unpleasant and for reasons given the mixture was likely to be more generally distributed in the field and consequently more effective. The land in the river bottoms being practically level, the bait was largely applied by single individuals sowing it from the end of a

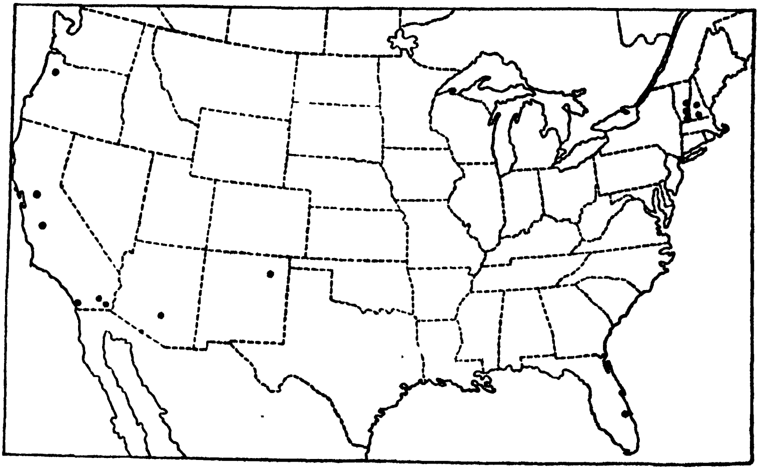


FIG. 9.—Map showing localities of grasshopper experiments in 1915.

buggy or light wagon. (Pl. LVI, fig. 3.) Early in this experiment it was determined that the amount of fruit should be doubled, that is, six fruits instead of three being used to 25 pounds of bran, and that the bait must be applied in the very early morning. Furthermore, the best sweetening substance was what is known as cattle molasses—the refuse sirup from the sugar factories which is largely used among dairymen in rations for dairy cows.

The general results in the Merrimac Valley demonstrated the fact that though grasshoppers had ravaged this country for nearly a century they might be practically exterminated throughout the entire valley. At the close of the season farmers declared that, after having carried out experiments with the new processes in cooperation with the Federal entomologists, they had no further fear of grasshopper attacks.

The broken and hilly nature of the land where outbreaks occurred in Vermont made it impossible to use a carriage or wagon in sowing the bait. The work was therefore done by hand. (Pl. LVI, fig. 2.) It was found that three men sowing the bait, as they would grass seed, could cover about 25 acres per hour. Here, too, it was necessary to double the amount of fruit ordinarily used and to apply the mixture in the very early morning. As a result of the experiment, which covered about four counties, the grasshoppers were nearly exterminated over an area where the annual loss from these pests for the last three years has been estimated at approximately $200,000. As the estimated loss in New England amounted to practically half a million dollars, it will be observed that the experiment not only demonstrated the efficiency of these poisoned baits when properly prepared and applied, but resulted in a saving of hundreds of thousands of dollars to farmers themselves.

As there seems to be no difference in effectiveness between oranges and lemons, it was left to the farmer to choose the less expensive of the two. Decayed fruit was not desirable, and it was found that many of the best results were obtained if the fruit was added in the early morning just before the application was made. In other respects the mixture was improved by being mixed the day before.

Experiments in Florida were carried out under radically different conditions, both as to climate, elevation, and rainfall.

The fields were located but a few feet above sea level and a different species of grasshopper, which is shown in Plate LII, figure 1, had to be dealt with. This particular grasshopper is unable to fly on account of its undeveloped wings, and is popularly known as the "lubber." It lays its eggs by preference in the drier portions of the Everglades and similar lands, such as the banks of drainage ditches, and is in consequence most numerous and destructive in Florida on recently drained land. By July, 1915, the grasshoppers had already eaten most of the crops in St. Lucie County, where the experiments were conducted, and the farmers were so badly discouraged that many of them were on the point of abandoning their lands. One land company offered a prize of $1,000 to anyone who would devise a method of controlling the pest. Not only had forage and truck crops suffered badly, young orange trees been defoliated, and vines and shrubs about the houses destroyed, but the grasshoppers were actually crawling over the houses, into the windows and doors, falling into the water supply, and becoming in other ways an intolerable nuisance.

In carrying out the poisoned-bait experiments it was found impossible to secure wheat bran, and, consequently, it was necessary to substitute ordinary middlings. As a result the mass became so sticky when moistened that it was difficult to distribute it evenly. Despite this fact, however, the bait proved thoroughly successful. Approximately half of the grasshoppers, which came from all directions to feed upon it, died within 12 hours and almost all of them were dead within 48 hours. The substitution of a corresponding bulk of limes for lemons and oranges did not lower the value of the mixture in the least.

On a semiarid plateau in New Mexico, with an elevation of 6,500 feet, the poisoned bait proved as successful as in New England and in Florida. It was noticed, however, that here the living grasshoppers devoured those which were first killed by the poison and then died themselves from the effects. This fact was observed also in California.

The experiments carried on in Arizona are especially interesting because of the light thrown upon the possible causes of previous failures with poisoned bran bait. In Arizona the formula first used was 100 pounds bran, 2 dozen lemons, 4 pounds Paris green. To this it had been intended to add 2 quarts of molasses, but the only material of the sort which could be obtained was ordinary table sirup, 2 quarts of which were added to the mixture. The first application, made in an alfalfa field, resulted in an almost complete failure, not more than 10 per cent at most of the grasshoppers being killed. A second trial in the same field met with no greater success. A quantity of damaged sorghum molasses was then obtained and substituted for the table sirup. A third trial of the bait in the same field where previous experiments were carried out resulted in the killing of 95 per cent of the grasshoppers.

In the experiments in California it was found quite important to spread the bait in the fields at a time when the grasshoppers were both hungry and in search of moisture. In arid sections the heat of the day leaves them very thirsty, and if they find well-moistened bait ready for them in the evening as they are about to ascend the plants on which to feed and pass the night they are practically certain to make a hearty feast of it. In the morning they have already fed upon the plants before they descend to the ground, and in consequence the bait is not so attractive. For the same reason the poison is more effective when no other moisture is available than when spread on ground wet from irrigation. For these reasons, in the San Joaquin Valley, Cal., where the area under treatment exceeded that of all other experiments combined by several thousand acres, it was found that the best time for application of the poison was at or about 4 o'clock in the afternoon, and that it was necessary to use 4 gallons of water to each 25 pounds of bran, rendering the mixture more moist than in the more humid regions. It was also found that where it was obtainable more easily alfalfa meal could be substituted for wheat bran with equally good results and that the application could be made much more rapidly and evenly by the use of a broadcast grain seeder placed in a wagon, precisely as if grain were to be broadcasted. (Pl. LVI, fig. 1.) The most effective sirup was found to be the refuse from sugar factories, costing 15 cents per gallon, the total cost of the poisoned bait varying from 20 to 25 cents per acre. The pulp from beet-sugar factories was found to be effective, but less so than either wheat bran or alfalfa meal. The results obtained in the Imperial, San Joaquin, and Sacramento Valleys, as well as in Oregon, were practically the same as in the other States. Where quick action is necessary, the practicability of substituting alfalfa meal for wheat bran is important, as frequently machines for grinding the alfalfa into meal are found on large ranches.

The small farmer who is called upon suddenly to protect his crop may apply by hand, either on foot or from a buggy or light wagon, the Criddle mixture with the added fruit, or he may use the poisoned bran mixture with the increased amount of fruit. If oranges or lemons are not obtainable easily, crushed tomatoes or crushed watermelons or limes equal in bulk to a half dozen lemons or oranges may be substituted.

The main points brought out by this extensive series of experiments are that the poisoned baits are effective under all climatic conditions, but that a greater amount of water must be used in the bait in arid and semiarid countries; that the molasses or sirup should be of the cheapest and most easily obtainable sort, but that brands with a strong penetrating odor, such as sorghum and New Orleans molasses, will prove much more satisfactory than those made from glucose. The application should be made in the early morning in the more humid sections of the country, but it will be more effective if applied in late afternoon in the more arid regions. So far as we have been able to determine, these baits will prove effective against all species of grasshoppers attacking crops in the United States.

# HOW THE DEPARTMENT OF AGRICULTURE PROMOTES ORGANIZATION IN RURAL LIFE.

By C. W. THOMPSON, *Specialist in Rural Organization, Office of Markets and Rural Organization.*

IN nearly every bureau or office of the Department of Agriculture the work undertaken for the improvement of farming and of the conditions of farm life has to deal with organized activity in some form.

In the farming processes, from the first stage to the last, from the selection of the seed to the marketing of the product, as well as in the promotion of general social well-being in farm life, organization has proved its value, and as this fact is being realized more and more fully, organized methods are being employed in increasing measure.

The purpose of this article is to outline briefly the ways in which the advantages of organization are utilized under the various projects of the department and the means through which improved organization is promoted and encouraged.

## ORGANIZATION OF THE INDIVIDUAL FARM.

Attention is first called to that part of the department's work which is concerned chiefly with the organization of the individual farm. Here the problems center around the question of how the various enterprises of a farm may be selected and combined so as to yield the largest net labor income. The efforts of the Office of Farm Management are especially devoted to these problems, and its aim is to determine what the factors are that promote efficiency in farm organization and to advise farmers in regard to these matters. One phase of this work is illustrated by a farm-management survey in Chester County, Pa. Tabulations were made for this county with a view to finding the most profitable percentage of crop area for each of the crops grown. In the light of results thus obtained a cropping system was outlined which was designed to produce the greatest profit under the given conditions, the system being based on successful local experience. Similarly, a proper correlation between live-stock enterprises and crop enterprises is being worked out.

While the Office of Farm Management endeavors to determine the principles governing efficient farm organization, special effort also is being made by the department, through the Office of Extension Work, North and West, in the States Relations Service, to utilize local demonstrations as a means of teaching the importance of efficiency factors in farm organization. Groups of 60 or more farmers are selected in various localities, their business is analyzed, and on the basis of the results, modifications in the organization of the various individual farms are suggested. This appears to be most satisfactorily accomplished by segregating a small number of the group whose net income is considerably higher than the average and using these farms as illustrations in pointing out the factors that make for the highest efficiency. Where groups of farmers desire help in the organization of farm-management clubs, through which farmers may associate to study the business side of their farming, the Office of Extension Work, cooperating with the State college, is prepared to give active field assistance. The Federal office has appointed 24 State farm-management demonstrators (paid partly by the department and partly by the States), who are members of the extension staff in their respective States and who are available for work in cooperation with county agricultural agents in developing farm-management demonstrations among farmers.

Even if the various individual farms had the benefit of efficient internal organization, they would still be handicapped greatly in their economic and social relations with each other and with the outside world, unless the advantages of organization were also secured for their many external relations. In one respect, particularly, the problems here confronted differ very materially from those involved in the organization of the individual farm.

The internal organization of a farm is concerned with the most efficient way of combining its various enterprises, and its problems are primarily economic rather than social; external organization, on the other hand, has to do with bringing people together to work for their mutual interests, and its problems are largely personal and social problems, even though the nominal purpose of a given organization may be an economic one.

## ORGANIZATION OF BOYS' AND GIRLS' CLUBS.

Perhaps the least difficult, though by no means the least important, of the external organization work undertaken is that in connection with organization among boys and girls on farms. To the promotion of these activities the department has given considerable attention, especially through the States Relations Service and the Bureau of Animal Industry.

This work was begun by the department in the Southern States about eight years ago, and in the Northern States about three years ago. The object of the work is to instruct boys and girls in practical agriculture and home economics, bringing to them the latest results of research by the department. The number of boys and girls enrolled in the club work has grown rapidly, until it now approximates 250,000, and the activities of the members, which were at first confined to the growing of corn, now include the following projects: Corn, potato, home garden and canning, mother-daughter home canning, alfalfa, poultry, market garden, farm and home handicraft, forage, home-management, farm-management, sewing, and sugar-beet clubs. The Office of Extension Work in the South has a large corps of workers in Washington and a still larger force in the field, who give their entire time to boys' and girls' club work in the Southern States, and a similar organization in the Office of Extension Work in the Northern and Western States promotes club work among the boys and girls in its territory.

In the organization of boys' and girls' clubs the department works in close cooperation with the State colleges of agriculture through their extension departments. Arrangements are made for the appointment of State leaders in club work who are paid partly from Federal and partly from State funds. The State leaders are thus the employeës of both the Department of Agriculture and the State colleges, and are responsible to both. Working usually through the county agents and the county superintendents of schools and local teachers, the State leader directs the organization of boys' and girls' clubs in communities which show sufficient interest in this movement. He travels throughout the State, explaining the work to boys and girls, to gatherings of teachers, and to various organizations interested, such as chambers of commerce, business men's associations, bankers' associations, women's clubs, and granges. Whenever possible, he is present at the first meeting of a group of prospective club members to explain the work and assist in the organization of the club. In many States the State leader has one or more assistants who devote their entire time to giving out instructions, visiting club leaders, looking after the details of organization, and keeping in touch with all the projects in the field. The county agricultural agent also is ready to assist in the organization of clubs within his territory, and to follow up their later efforts with expert advice and assistance.

Once every year, at Washington or at some other central place, a conference of State and district club leaders is held, at which the general policies and the general methods to be followed in the conduct of the work are determined for the ensuing year, and special instruction given in extension work.

In addition to the direct advice and help of the local leader, the county agent, or the State leader and his assistants, members of the clubs receive complete instructions by mail both from the department and from their State colleges. Thus the corn-club boys learn from the authorities of the department and the college the best way of fertilizing their plot of ground, preparing the seed bed, selecting their seed, planting, and cultivating. The canning-club girls are told how to cultivate their tenth of an acre of tomatoes or other vegetable, and are given full instructions for the work of canning. During the canning season demonstrations are given in as many localities as possible by the State agent or her assistants. The State leader furnishes all club members with blanks on which they are to report from time to time their method of procedure in growing their crops. At the end of the season a fair, festival, or contest is usually held, and prizes are given for the best exhibits or the best essays on the growing of the crop. The boy who has raised the most corn at the lowest cost becomes the club champion and competes with other club champions for the State championship. Prizes are given by local residents and by the State colleges, and diplomas are given to the State champions by the Secretary of Agriculture.

Another form of organization among farm boys which the department has promoted successfully is the pig club, which is under the direction of the Bureau of Animal Industry, cooperating with the State college. This work was taken up by the department in 1912, in cooperation with the State of Louisiana, the work having previously been started in that State under the direction of the State university. It has been gradually enlarged and extended until there are now pig clubs in 13 States, with a total membership of over 9,000. The Federal department and the State colleges cooperate in this work in the same way as in the boys' and girls' club work under the States Relations Service, a State pig-club leader being appointed jointly by the department and the extension division of the State college. The State leader sends out complete information on how to organize clubs, forms for reporting on the work, advertising posters, and other material. In each county or community there is a local leader who directly supervises the work of the members. The State leader, with the assistance of the offices in Washton, prepares circular letters on the care and management of pigs, and sends them either direct to the members or to the local club leaders. Each member of a club must secure at least one pig to feed during the season according to instructions from the State leader. The boys are encouraged to get pure-bred sows, if possible, and raise litters of pigs; or, they raise their pigs for meat and become members of the ham and bacon clubs. The Department of Agriculture, through the State leader, furnishes instructions on slaughtering and on curing the meat to the members of these clubs.

The Bureau of Animal Industry, in cooperation with the State colleges, also has charge of the boys' and girls' poultry-club work in the Southern States. In each of the six States which cooperate with the department in this work there is a State poultry-club leader who directs the organization of poultry clubs. He travels throughout the State explaining, both to the members and to their parents, the proper methods of poultry raising. Personal supervision is given by a local leader, who is usually the local school-teacher. The object of this type of organization is the improvement of farm poultry and the placing of the industry on a more profitable basis. The importance of pure-bred poultry is emphasized. Each member is required to obtain at least one sitting of pure-bred eggs, and then to feed and care for his birds according to instructions furnished by the department. A great increase of interest in poultry raising has been noticed in the States where this work has been conducted. The establishment of community poultry-breeding associations is also encouraged and has been undertaken by the older people in some instances as a result of the initial steps taken by the boys and girls. There are at present 326 boys' and girls' poultry clubs in the six States where this work has been undertaken, with a total membership of 3,722.

The success of the boys' corn clubs and pig clubs in the South has led those in charge of the work to plan for the extension of the movement through the formation of boys' farm clubs. In these clubs the boys who have already learned how to produce large yields of corn and how to feed pigs, in the earlier organizations, are taught the elementary principles of crop rotation, of the economical feeding of live stock, and of soil building.

## ORGANIZATIONS OF FARMERS.

While the department is giving considerable attention to organization work among boys and girls on farms, increasing effort is being expended in the interests of improved organization among adult farmers. The purposes which may be served by organized activity among adults are many and varied, as, for example, the introduction of a new crop in a given locality; the maintenance of standard strains of seed; the control of plant diseases; the development of such industries as dairying and cattle raising, with the accompanying problem of controlling animal diseases; road improvement; the marketing of farm produce, with its many allied problems; the improvement of credit facilities in rural districts; the securing of better and cheaper insurance and facilities for communication; and finally, the improvement of home life and social relations among rural people.

As a part of the cooperative agricultural extension work the States Relations Service and the State agricultural colleges are doing a large amount of work in forming organizations of farm people through which the county agents and other extension officers may carry on their work.

Two general types of such organizations are now being utilized. County organizations, often called farm bureaus, are being formed which are expected to take the initiative in securing county or local support for the county agent, take part in the selection and appointment of the agent, and stand behind him in his efforts to advance the agricultural interests of the county. Many of these organizations include business and professional men as well as farmers, and their complex organization has given rise to special problems. However, it is now clearly apparent that while the cordial sympathy and support of all classes of our people in the movement for the improvement of agricultural conditions is very much to be desired, the farming people themselves should control and in the end determine the character and work of the organizations on which the extension system must depend for its local support.

Another type of local organization being tested in numerous places is the small community club. Where a considerable number of these clubs exist in a county they are often federated to form a county organization of some kind. The exact relations of organizations of either type to the extension system, the breadth and variety of their functions relating to extension work or other enterprises, and the most effective forms for their organization are as yet largely undetermined and they must still be considered as in the experimental stage.

In the Southern States about 500 communities were organized during the year ending June 30, 1915. These community organizations are engaging in some special work, such as cooperative breeding of live stock, purchasing and selling things required or produced on the farms, handling seed, and marketing crops, in addition to a study and demonstration of better farm practice. Many of these community organizations not only handle financial matters, but take an active interest in the social and educational betterment of the neighborhood.

In the Northern and Western States the county agents were instrumental in forming 875 local organizations for the promotion of agriculture and country life, including farmers' clubs for general purposes and associations for improvement of crop production, breeding of live stock, cow testing, purchasing, and marketing.

Much of the organization work of the different bureaus of the department, as described in this article, is done in cooperation with the county agents and other extension officers of the State agricultural colleges and the States Relations Service.

### ORGANIZATION FOR THE ESTABLISHMENT OF A NEW INDUSTRY.

The introduction of a new crop or agricultural industry in a given locality is a step which may call for organization and cooperation among the farmers of that locality. The following illustrations indicate the manner in which the department lends its assistance in cases of this kind.

Prior to 1905, all of the paprika pepper used in this country was imported from Hungary and Spain. The scientists of the Bureau of Plant Industry had studied the characteristics of this plant, the kind of soil, climate, and cultivation which it required. Near Ebenezer, Florence County, S. C., were found what appeared to be the required soil and climatic and labor conditions. After experimentation had proved that the plant could be grown successfully there, the Department of Agriculture furnished seed to a number of farmers who entered into a contract under which they were to raise the crop as directed. The purpose of the department in supervising the work of marketing was to insure a product of proper standard, and its sale at a satisfactory price. A standard of pungency and appearance for the product was established and all pepper sold was graded according to this standard.

After the industry was well started the department withdrew from active participation and assisted in the formation of a pepper growers' association, which was to maintain the proper standard of seed. The association was to hold the seed and give it out only to members who agreed to place the marketing of the product in the hands of a representative of the association who was familiar with marketing conditions.

While some difficulties have been encountered by the association in maintaining a pure seed supply, a standard has now been established for first-class pepper, and the industry has become fairly well established.

An organization was necessary in this instance, first, to insure a sufficient quantity and such quality in the product as would enable it to be marketed to advantage, and second, to maintain sufficient authority over the growers to insure the production of a uniform product of high standard.

In 1905, studies on three of the irrigation projects in Arizona showed that these communities needed a high-priced staple agricultural product which would serve as a cash crop, giving high returns per acre, and not subject to deterioration in transportation. The Department of Agriculture selected Egyptian cotton as the crop which would best suit these conditions, and a committee, which later became interbureau, was developed in the Bureau of Plant Industry and known as the Committee on Southwestern Cotton Culture. This committee was created to encourage the establishment of this industry and to study the economic and agricultural problems connected with its establishment, especially on the irrigation projects of the Salt River Valley of Arizona and the Imperial Valley of California. To make the production of cotton economical it was necessary to have a sufficiently large acreage to pay for the installation of machinery for ginning and baling, and for economical marketing there was need of a sufficient number of bales to permit car-lot transportation. These facts were explained to the farmers on the projects, and they agreed to devote a sufficient number of acres to cotton. A ginning association was organized, and through it arrangements were made to secure from the department expert supervision looking toward the maintenance of a proper seed supply. For the latter purpose three things were necessary: (1) The maintenance of one variety; (2) the removal of inferior plants during the growing season; and (3) precautions against mixing good seed with that from inferior stock in the ginning. In addition to maintaining a high grade of seed and making the ginning economical and efficient, the association secured an expert classer for the grading of the cotton after it was ginned. There still remained the problem of finding a market for the product. The department, through the Office of Markets and Rural Organization, assisted in this by showing the farmers how much their cotton was worth, with the result that they decided to hold it until a market had been established.

Through the Horticultural Division of the Bureau of Plant Industry the department has encouraged the formation of the National Potato Growers' Association, with its constituent State and local associations, whose membership is made up of potato growers and handlers interested in obtaining better seed. These associations aim primarily to develop highly productive strains that are true to name. They also give attention to the improvement of the general commercial crop. The department furnishes these associations with literature on potato culture, and works in cooperation with the county agents in taking up special problems with the various associations.

In connection with the problem of improving the quality of seed potatoes has arisen the need of reliable sources from which farmers may secure seed potatoes that are free from disease and varietal defects. This has led the department to devote attention to the organization of a system of State certification of seed potatoes in a number of States.

## ORGANIZATION FOR THE DEVELOPMENT OF AN ESTABLISHED INDUSTRY.

Dairying is an industry which requires various forms of organization among farmers for its highest development. The Department of Agriculture therefore has given particular attention to the promotion and improvement of organization in this field.

One of the essentials for profitable dairying is the keeping of accurate records of the milk and butter-fat production of individual cows; or, as it is commonly termed, the "testing" of the cows to determine which are yielding a satisfactory profit and which are not. Where farmers wish to form cow-testing associations, the Department of Agriculture furnishes information with regard to the proper methods of organization and supplies record blanks to be used in the work. In cooperation with certain States, the Federal department also maintains a number of dairy-extension specialists, who give assistance to farmers in forming cow-testing associations. These local associations are usually organized for one year, and when the association's agreement is not renewed at the end of the year, the department endeavors to find out the reason and to bring about a continuance of the organization. Assistance is also given to farmers whose records show that they do not get adequate returns from their animals. There are now over 200 cow-testing associations in the United States, with a membership of more than 5,500 farmers, involving not less than 100,000 cows.

Another form of organization which has for its object the improvement of dairy herds is the cooperative bull association. The Dairy Division of the Bureau of Animal Industry is interested in promoting this work and is prepared to give farmers information on how to organize and conduct the business of such cooperative associations. Inasmuch as some of these societies have organized and then failed to keep up the work, the Dairy Division is endeavoring to find out the causes of failure and to strengthen the organizations wherever such help is needed.

For a number of years the department, through this division of the Bureau of Animal Industry, has assisted farmers in the organization of cooperative creameries and furnished them advice regarding buildings, equipment, operation, and management. Where a sufficient number of patrons are reported, with enough cows to make the establishment of a creamery practicable, the department furnishes blue-print plans for a suitable building, with an estimate of its cost, and a list of the necessary machinery and its cost. Through its dairy specialists and field representatives the department also furnishes practical assistance to struggling creameries by advising them concerning business affairs. Creameries are sometimes deficient in such matters as the methods of grading cream, general business management, or the marketing of their product, and such defects have even jeopardized the existence of the organization. The department has been able to be of assistance in a number of such instances by pointing out the necessary changes in business methods.

## ORGANIZATION FOR THE CONTROL OF ANIMAL DISEASES.

The manner in which the department assists farmers, through organization, to control effectively the spread of animal diseases is illustrated by certain work undertaken on the North Platte irrigation project. Specialists of the Bureau of Plant Industry had decided that pork production should be fostered on this project. A serious difficulty was encountered, however, in the presence of hog cholera. To meet this situation three adjacent counties were organized into a sanitary district, and, with the authority of the Department of Agriculture, this district was quarantined against the importation of any animals from outside except those that had been properly examined and approved. Suborganizations were established in each road district, and the road supervisor was made responsible for the burial of every hog that had died of the cholera. Provision was made for the vaccination of each diseased animal, and as a result of these organized measures the disease was eliminated and the development of the industry made possible. The Office of Demonstrations on Reclamation Projects of the Bureau of Plant Industry, which participated in this work of disease control, has also been of assistance in advising farmers' associations, including cow-testing associations, breeders' associations, and cooperative creameries.

## ORGANIZATION FOR THE IMPROVEMENT OF PUBLIC ROADS.

Thé Office of Public Roads and Rural Engineering lends its aid to local organizations having for their object the improvement of the public roads, by supplying, upon request, drafts of tentative constitutions and by-laws and outlines for a working policy. The advice given depends largely upon the objects for which the association is formed and the prevailing local conditions. The advice given through correspondence is supplemented by the distribution of various publications on road making and maintenance; and where the movement is of sufficient magnitude to warrant it, representatives of the Office of Public Roads and Rural Engineering are sent to address the local organizations and point out ways and means by which they can accomplish the best results. It frequently happens that these local clubs are formed as a result of work in connection with good-roads trains operated by railroad companies and carrying exhibits supplied by the Department of Agriculture, illustrating proper road construction and maintenance. When such a plan is followed, the representatives of the Office of Public Roads and Rural Engineering are enabled to cooperate directly in the organization of a number of local road clubs or associations on a single trip. The efforts of local organizations are further supplemented through the loan of lantern slides for local use in lecture work.

### ORGANIZATION FOR THE IMPROVEMENT OF MARKETING FACILITIES.

Specialists in the Office of Markets and Rural Organization are prepared to give assistance to farmers desiring to organize cooperative marketing and purchasing associations by furnishing forms for a constitution and by-laws and such suggestions as may aid in the establishment of the best known type of organization for given conditions. Similar assistance is likewise available for the organization of cooperative cotton-seed oil mills, cotton gins, warehouses, and cotton-grading associations. These specialists also endeavor to give suggestions to existing organizations whenever desired and to supply published material bearing on organization methods and printed forms for the use of cooperative organizations.

In connection with its studies of marketing business practice, the Office of Markets and Rural Organization has devised uniform systems of accounting for various types of cooperative marketing organizations, including fruit and produce exchanges, cooperative canneries, live-stock shipping associations, and cooperative stores. Samples of the forms comprising these accounting systems, with instructions for their use, are furnished free upon request to organizations desiring to install the systems; assistance is given by correspondence, and in some instances, where it is feasible, specialists are furnished to assist in the installation of these accounting systems.

In order to promote efficiency in the general business practice of cooperative marketing agencies, advice is given relative to the methods of securing capital, the necessary plant and equipment for operation, the duties of the various officers and departments of the business, and the necessary audits, both internal and external.

Several hundred cooperative and other farmers' elevators, creameries, fruit and produce exchanges, and live-stock shipping associations are using the uniform system of accounts devised by the Office of Markets and Rural Organization. During the past year actual assistance has been rendered in improving the general business methods of cooperative organizations representing over 45,000 individual producers.

Expert advice can be secured from the same office on transportation and storage problems, including questions connected with the collection of claims, car shortage, car refrigeration, and terminal storage, and on matters relating to grades and standards of perishable products, size and style of suitable containers, and market preferences with regard to containers and style of packing for such products. There was also available for shippers' associations during the summer of 1915 a daily series of telegraphic reports on the movements and prices of the following perishable crops: Strawberries, cantaloupes, tomatoes, and peaches. Live-stock shippers' associations can obtain the advice of specialists on problems connected with grading, market prices, market preferences, market demands and customs, the best available markets, and the transportation problems confronted in the marketing of live stock.

## ORGANIZATION FOR THE IMPROVEMENT OF CREDIT.

Upon request, the Office of Markets and Rural Organization advises with farmers on matters pertaining to organization for credit improvement, including mortgage and personal credit associations. Before such organization work can be established successfully in any given locality, it is important to consider existing State legislation as well as the economic conditions involved. Where assistance is desired, the office endeavors to study the particular conditions involved and to aid in perfecting organization agreements adapted to such conditions. As far as possible active field assistance is given for this purpose, as in the case of a cotton growers' association in Arkansas, whose members have entered into an agreement under which the association indorses mortgage loans for its members.

### ORGANIZATION FOR THE DEVELOPMENT OF MUTUAL INSURANCE AND TELEPHONE COMPANIES.

Similar assistance is also given, wherever desired, to farmers' mutual insurance companies, including fire, hail, live-stock, and windstorm insurance, and to telephone companies. This includes not only suggested forms of constitution and by-laws but also advice with reference to methods of procedure and business practice. A considerable number of companies have already been advised by correspondence regarding problems of organization.

### ORGANIZATION FOR THE ENCOURAGEMENT OF SOCIAL ACTIVITIES.

Through the Office of Markets and Rural Organization the department has given active assistance, in cooperation with State or local agencies, in the conduct of social and economic surveys and in the promotion of suitable organization work as suggested by such surveys, especially in the States of Alabama, North Carolina, and Virginia. Experiments in the improvement of community and county fairs have been conducted in Alabama and Maryland, with successful results in the localities concerned. As a result of experiments in Chilton County, Ala., at least 40 local community fairs were held in various parts of the State during 1915.

The department has also studied organization work in the interests of health improvement for the purpose of detecting sources of prevalent diseases in communities, as well as for the improvement of general health conditions. Thus organization work was effected by which analyses of water were undertaken in a number of communities, revealing a widespread source of infection for typhoid fever. This was followed by further organization work through which all persons in certain communities were vaccinated. Similar assistance was rendered in organization work for the maintenance of a county rural nurse.

The Office of Markets and Rural Organization endeavors to advise, wherever communities are interested in the organization of "clean-up" or "get-together" days, or where communities desire to meet periodically for the discussion of matters of social and economic interest and community improvement. Cooperative arrangements have been made with one State under which suggested programs for such meetings are supplied to communities throughout the State.

## PURPOSE OF ORGANIZATION WORK.

Reviewing all the various types of organization through which the Department of Agriculture seeks to promote the welfare of the farmer, it may be noted that in every case the organization is undertaken for some specific purpose, and that that purpose is one which can better be accomplished through concerted effort than through individual action alone. This represents the general policy of the department with regard to organization among farmers. The department does not encourage organization simply for the sake of organization, nor does it encourage the indiscriminate formation of organizations for any and every object whatsoever; for some objects may be accomplished efficiently and economically by individuals working each by himself.

For the accomplishment of those objects which clearly call for cooperative or coordinated action on the part of the farmers, the department encourages a more efficient use of existing organizations, where that is practicable, either by inducing them to take up new lines of activity, or by pointing out more efficient methods of carrying on the activities for which they were originally formed. Where new associations are needed, the department endeavors to secure organizations which are as simple in form as possible, and to keep in the foreground the object of the organization rather than the organization itself.

# ECONOMIC IMPORTANCE OF THE FEDERAL INSPECTION OF MEATS.

By George Ditewig, D. V. S., *Meat Inspection Division, Bureau of Animal Industry.*

THE Federal inspection of meats and meat food products is of economic importance in several respects:

It is the instrument by which an important part of the export commerce of the United States has been secured and preserved.

It is a service in hygiene and sanitation of incalculable value to the country at large.

It is the most thoroughly equipped agency through which may be gathered the data necessary to the success of any broad program having for its object the conservation of the National meat food supply through the eradication of damaging and destructive diseases from the food animal herds of the country.

The meat inspection service possesses other elements of economic importance, but for the purposes of this article these need not be enumerated.

Federal meat inspection is conducted under the provisions of the act of Congress of June 30, 1906, commonly designated the "meat inspection act," the purpose of which is to prevent the use, in interstate or foreign commerce, of meat and meat food products which are unfit for human food. In brief, this law authorizes the Secretary of Agriculture, at his discretion, to make, through inspectors, an ante-mortem examination and inspection of all cattle, sheep, swine, and goats to be slaughtered and the meat and meat food products of which are to be used in interstate or foreign commerce; it also directs the Secretary to make, through inspectors, a post-mortem examination and inspection of the carcasses and parts thereof, and an examination and inspection of all meat food products, of all such animals prepared for human consumption at any slaughtering, meat canning, salting, packing, rendering, or similar establishment for transportation as articles of interstate or foreign commerce. If, on such post-mortem inspection, the articles are found to be wholesome, within the meaning of the law, it is the duty of department inspectors to mark them "Inspected and passed," and, if not, to mark them "Inspected and condemned." Condemned articles are required to be destroyed for food purposes in the presence of an inspector.

Inspection of meat and meat food products derived from the animals mentioned, prior to entering into interstate or foreign commerce, is mandatory, except in the case of retail butchers and retail dealers supplying their customers, and of animals slaughtered by a farmer on the farm. The law prohibits meat or meat food products being sold or offered for sale in interstate or foreign commerce under any false or deceptive name, and it provides that the Secretary shall prescribe the rules and regulations of sanitation under which inspected establishments shall be maintained, and that he shall make, from time to time, such rules and regulations as are necessary for the efficient execution of the provisions of the statute.

The meat-inspection regulations based on the act require that the proprietor or operator of each slaughtering or food-preparing establishment to which the law applies shall make application to the Secretary of Agriculture for inspection. Retail dealers who are granted a qualified exemption under the terms of the law must make application for such exemption. When an application for inspection is received by the department, the establishment to which it refers is examined by an inspector of the Bureau of Animal Industry, under which the service is administered, and the applicant is advised as to the requirements of the regulations relative to the facilities to be furnished by the establishment for the conduct of the inspection, also as to the corrections and improvements to be made, if any are needed, for placing the plant in a sanitary and otherwise satisfactory condition. When the inspection facilities have been provided, and the defects as to the sanitary conditions corrected, an official number is assigned by which the establishment is designated and its products identified, and inspectors are stationed at the establishment to conduct the inspection.

As showing that the Federal inspection of meats is a service in hygiene and sanitation of incalculable value to the country at large, and that this service is performed at an extremely low cost, the following facts and figures are cited:

In the fiscal year ended June 30, 1915, inspection was maintained at a total of 896 establishments situated in 247 towns and cities in the United States. The total of animals inspected at the time of slaughter was, in round numbers, 58,000,000, divided approximately as follows: cattle, 6,964,000; calves, 1,735,000; goats, 165,000; sheep, 12,909,000; and swine, 36,247,000. The number passed on the slaughter inspection was 57,608,000. The number of carcasses passed under special restrictions, that is, after they had been subjected to sterilization, was 124,270. The whole carcasses entirely condemned on this inspection, and which were destroyed to prevent their use for human food, numbered 290,606. The number of carcasses retained on the post-mortem inspection for the removal and condemnation of a part affected with some disease or condition which rendered the part unhealthful or otherwise unfit for food without affecting the remainder of the animal was approximately 3,600,000. In addition to the carcasses condemned on the slaughter inspection there were condemned for various causes on the ante-mortem inspection, including those found dead or in a dying condition, 106,962 animals.

The reports covering inspections and reinspections of meats and products prepared and processed in the establishments show an aggregate of several billion pounds, while the quantity of meats and products condemned on such reinspection on account of having become tainted, rancid, or otherwise unwholesome, amounted to several million pounds.

Under the tariff act of October 3, 1913, meats and meat food products are admitted into the United States free of duty, subject, however, to the inspection requirements prescribed by the Secretary of Agriculture. The regulations governing the inspection of imported meats are similar to those prescribed under the meat-inspection act for domestic meats and products. The imported meats and products inspected during the year totaled 245,000,000 pounds.

The number of employees in the Meat-Inspection Division at the close of the fiscal year was 2,550, consisting of approximately 780 veterinarians, graduates of accredited colleges, and 1,600 lay inspectors who are trained laymen, the remaining number being made up of administrative officials, specialists, laboratory inspectors, and clerical forces.

The sum appropriated by Congress for meat inspection for the fiscal year 1915 was $3,375,000, within which sum the service was maintained. In other words, the service to the people of the United States cost less than 6 cents for each of the 58,000,000 animals slaughtered. This small charge per animal covered the entire inspection from the first inspection of the live animal to the final examination of the meats and the finished products when ready for delivery to dealers or consumers, and is not attained at the expense of efficiency in the service. In fact, the reverse is the case, in that it is the constant endeavor to improve and strengthen the service.

The advantages residing on the side of the Federal inspection in respect to cost of operation are widespread and effective organization, training and specialization in duties, and heavy volume of operations upon which to compute unit cost. It would be quite impossible for any State or municipality in the United States to maintain for itself a system of inspection of the same completeness and efficiency except at a ratio of expense very much in excess of that of the Federal inspection. Inasmuch as upward of 60 per cent of the cattle, sheep, swine, and goats slaughtered for food in the United States are inspected under Federal inspection, the economic benefit accruing to the community at large through the Federal service is apparent.

The Federal inspection of meats and meat food products secured and has preserved an important part of the export commerce of the United States. Commercial and economic necessity was the chief consideration leading to the earliest enactments by Congress providing for meat inspection (acts of Aug. 30, 1890, and Mar. 3, 1891). Entrance to foreign markets was necessary for the disposal of the great surplus of food animals and meats produced in the United States. Prohibitions and restrictions had been raised to such an extent by different foreign governments against the importation of American meats that inspection and certification by our Government to overcome them became necessary. Accordingly, the laws referred to were enacted by Congress, inspection was established, and certification provided as to the soundness of the animals and of the wholesomeness of the meats passed under such inspection. The result was expansion in the export trade in meats and food animals, with corresponding benefit to the agricultural interests of the United States. These laws did not contemplate an inspection so broad and effective as the one provided for by the act of June 30, 1906; nevertheless, there was built up a system of competent inspection for all the meats exported to countries requiring certification by this Government, and a like inspection for a high percentage of the fresh meats shipped interstate in the United States. Moreover, when the present law was enacted the organization which had been formed was qualified to take up the work of carrying its broad and more stringent provisions into effect.

The need of the Federal inspection of meats and meat food products destined for export is necessary to-day as in the past, notwithstanding that the United States has become a meat-importing country. The decline in domestic production which has led to these importations has been very marked as regards fresh beef and mutton, but there continues to be a considerable surplus in certain lines of pork meats, lard, oleo oil, edible tallow, and lard substitute, for which foreign markets must be sought. The requirements of foreign governments relative to the certification of meats admitted by them have increased rather than diminished, and an inspection that will meet them remains an economic necessity. The number of pounds of all forms of meat and meat food products derived from cattle, sheep, swine, and goats exported under Federal certificates of inspection has been substantially as follows, the years cited being the Federal fiscal years, and the amounts stated in round numbers:

In the 5-year period from 1898 to 1902, inclusive, the lowest annual exportation was 640,000,000 pounds, and the highest 766,000,000 pounds. In the 5-year period from 1903 to

1907, inclusive, the lowest annual exportation was 531,000,000 pounds, and the highest 1,360,000,000 pounds. The explanation of the great increase indicated in the last-named total is that, beginning with 1907, the certifications were made to include certain meat food products for which certification had not previously been required. In the 5-year period from 1908 to 1912, inclusive, the lowest annual exportation was 815,000,000 pounds, and the highest was 1,545,000,000. For the fiscal year 1913 the exports were 977,000,000 pounds, and in 1914 they were 904,000,000. For the fiscal year ended June 3, 1915, the exports totaled 1,391,000,000 pounds.

The Federal meat-inspection service is coming to be recognized as the most effective existing agency for collecting, on a broad scale, data absolutely necessary to the success of any extensive program for the eradication from the food herds of the country of such diseases as tuberculosis and certain serious parasitic affections, the presence of which is not suspected in the living animal until the damage they do is beyond remedy and the losses they cause are beyond prevention. The eradication, or a material reduction, of these diseases will lessen enormously losses on the farm, and in a corresponding measure remove the cause of the losses from condemnations under inspection. Every success in this direction is a material advance in the conservation of the Nation's possible meat supply. No country should deem itself so rich that it may be indifferent to losses of this character. Measures for their reduction or elimination should be employed, and at least two ways in which meat inspection is concerned are open for efforts in this direction. The first is to see that the rules governing condemnation on inspection are based on sound principles and that they are so intelligently applied that unwarranted condemnations shall not occur. The second is that means be devised and effected for the eradication, from affected herds on the farms, of diseases which, by their presence, make meats dangerous or otherwise unfit for human food. These proposals will be discussed in their order.

The first proposal has been substantially met under Federal inspection in that the rules of condemnation on account of disease have been prepared by scientific and practical experts and, moreover, essentially conform to the views expressed by a commission of seven men outside of the department convened in 1907 by the Secretary of Agriculture to study the subject and express opinions upon the disposal of carcasses affected with various diseases and abnormal conditions. This commission was composed of eminent pathologists and hygienists headed by Prof. William H. Welch, of Johns Hopkins University, as chairman. That the regulations are intelligently applied is indicated by the fact that all condemnations on the post-mortem inspection under the Federal system are determined by graduated veterinarians and then only after they have received instruction in the practical application of the rules after admission into the service. Therefore, important reductions in the losses entailed by inspection can not be made in this direction without impairing the safeguards which it is the function of meat inspection to establish and maintain. The procurement of reductions in this way can not be given favorable consideration. Therefore, recourse must be had to the second proposal.

The economic importance of the Federal meat inspection in relation to the eradication of disease from food herds lies in the fact that territorial areas and localities in which the obscure diseases referred to prevail to a damaging extent must first be known before any extensive plan of eradication can be carried into effect. This information the Federal meat inspection system is best equipped to supply. As previously stated, its inspectors, stationed in many States, make actual post-mortem examinations of upward of 60 per cent of the cattle, sheep, swine, and goats slaughtered for food in the United States, and in every case when disease is found the diagnosis and the character and extent of the lesions are made a matter of record. This information, used in conjunction with live-stock shipping records, is sufficient in most cases to fix the territory of origin, and in many cases is sufficiently complete to lead to an identification of the farm and herds that supply diseased animals for slaughter. With the perfection of shipping records and other means of identification, inspection data could be supplied even more rapidly than they could be used under any probable scheme of eradication.

The value of information thus collected has been proved in important instances in which it has been used for disease-eradicating purposes. The Federal Government, however, is without sufficient authority to enter the States without their consent to inaugurate independently so important and beneficial a project; therefore an adequate exercise of their police power by the several States in which the diseased herds are found will be essential to success. It is not too much to hope that the time is not distant when an enlightened public knowledge and appreciation of the importance of such a program of disease eradication will lead the States to grant their officials the power and support necessary to its success. When that time arrives the Federal meat-inspection service will be found ready to provide in great volume the essential data, and in other ways contribute to the success of the undertaking.

That the Federal inspection of meats and meat food products destined for commerce possesses great economic importance the facts submitted show, but of far greater value and of higher importance than this is its service in the field of hygiene, sanitation, and protection of the health of the people.

# THE PRODUCTION AND HANDLING OF GRAIN IN ARGENTINA.

By LAUREL DUVAL,

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NOTWITHSTANDING the fact that about 70 per cent of the corn grown in the world is produced in the United States, the surplus for export has decreased in recent years to such an extent as to permit importations of this cereal. These importations have been made chiefly from Argentina, which is the principal corn-surplus producing country of the world. The importation of corn from Argentina began as early as 1909, although only relatively small quantities were received until the latter part of 1913, at which time the imports showed a decided increase. Several cargoes each month were received until the outbreak of the European war, since which time importations have been received only occasionally.

The corn imported prior to 1913 was used primarily for manufacturing purposes, and comparatively little, if any, found its way into the interior of the country until the winter of 1913–14. However, the bulk of the corn imported from Argentina has been ultimately exported from the United States in the form of manufactured products. The importance of the corn imports from Argentina is relatively small, when it is considered that the importations during the past seven years amounted only to approximately one-tenth of 1 per cent of the total production of corn in the United States during the same period.

It is very possible that Argentina will, with the return of more normal conditions in ocean freights, continue to send corn to this market, especially in years of decreased production in this country. This, together with the fact that Argentina is taking a place of ever-increasing importance in the production of grain for export to the European markets, which also take most of the surplus grain from the United States, makes a discussion of the methods of handling grain in Argentina of considerable interest.

## THE CEREAL REGION OF ARGENTINA.

Argentina occupies approximately the same position south of the equator as that of the United States north of the equator, the total area being nearly two-fifths the area of the United States. A conservative estimate of the area which might be used for agricultural purposes would be 250,000,000 acres, of which possibly 120,000,000 acres would then be available for cereal and flaxseed growing. At the present time there are cultivated slightly more than 60,000,000 acres, of which approximately 34,500,000 acres are devoted to wheat, corn, flaxseed, oats, barley, and rye.

Wheat growing in Argentina first began on a large scale in the Province of Santa Fe. In 1895 this Province produced about half of the wheat of the entire country. However, since that time the area devoted to wheat has gradually extended west into the Province of Cordoba and south into the Province of Buenos Aires. Each of these Provinces is now producing more wheat than the Province of Santa Fe. The Territory of La Pampa Central, which only a few years ago was not considered by many as having a very promising future in the production of cereals, is gaining in importance with great rapidity, and there is every reason to believe that in the not distant future this Territory will take first place in the production of wheat in Argentina. The present wheat belt extends from 30½° to 39½° south latitude.

The corn region, while more or less in the same general section as the wheat belt, is principally situated near the Parana River in the lower part of the Province of Santa Fe, and in the northern part of the Province of Buenos Aires. The center of corn production is at about 33½° south latitude.

Flaxseed is grown chiefly between 31° and 35° south latitude, the center of production being from one-half to three-quarters of a degree nearer the equator than the center of corn production.

Nearly all of the oats in Argentina is grown in the Province of Buenos Aires between 34° and 39° south latitude. While oats is the fourth crop in point of acreage, there being only 2,500,000 acres utilized for its production, the increase in the oats area from 1895 to 1913 was over 3,000 per cent.

The production of barley and rye has not attained any great degree of importance in Argentina. The number of acres utilized for the raising of barley is approximately 418,000, and only 228,000 acres are devoted to the growing of rye. These two cereals are grown chiefly in the Province of Buenos Aires.

The region in which the cereals are cultivated extensively is known as the "Pampa," and is for the most part a vast fertile plain with a slight incline toward the sea. The cereal zone (Pl. LVII), which covers an area of approximately 160,000,000 acres, is included within the Provinces of Buenos Aires, Santa Fe, Cordoba, Entre Rios, and the Territory of La Pampa Central. The combined area of this entire region is, in round numbers, 205,000,000 acres. In addition to the production of over 500,000,000 bushels of grain and flaxseed, there are grown within the cereal zone more than 12,000,000 acres of alfalfa. Likewise, over one-half of the 110,000,000 head of cattle and sheep are raised in this same territory. In the principal part of the cereal zone there are usually no trees visible for miles, and then only such as have been planted around the dwelling houses or here and there a solitary "ombú" tree, with its gnarled roots protruding out of the ground. If this region were placed in the corresponding latitude in the United States, it would cover an area averaging about 425 miles wide and extending from the twenty-eighth to the forty-first parallel (Pl. LVIII).

The soil in this region is exceptionally fertile, a considerable portion being not unlike the rich soils of Illinois, both in productiveness and in appearance. The climate is mild, the temperature seldom rising above 95° F. in summer and rarely falling below 32° in winter, while snow is practically unknown.

## IMPORTANCE OF CEREAL AND FLAXSEED GROWING.

Argentina has developed during the past 25 years from a country of little importance in the exports of grain and flaxseed to the most important of all of the surplus-producing countries. In 1891 only 17,500,000 bushels of grain and flaxseed were exported, of which 14,500,000 bushels were wheat, 2,500,000 bushels corn, and 500,000 bushels flaxseed. In the year 1913, after satisfying the domestic needs of the country, there remained for export nearly 397,000,000 bushels of grain and flaxseed.

The rapid increase in the production of grain and flaxseed and its importance as a factor in the national wealth of the country are better illustrated by comparing the value of the exports of the cereals and flaxseed with the export value of the products of stock raising, which is now the country's second greatest source of wealth. From 1896 to 1902, a period of 7 years, the value of the stock, meat, and by-products exported averaged slightly more than $84,500,000, while the average value of the grain, including wheat flour and of flaxseed sold abroad during the same period, was a little less than $50,000,000. From 1903 to 1907, a period of 5 years, the average value of the products of stock raising exported was, in round numbers, $116,500,000, as against $141,250,000, the average value of grain and flaxseed. The difference in favor of the cereals and flaxseed was even greater for the 6 years from 1908 to 1913, when the average value of the surplus grain and flaxseed was nearly $221,000,000, while the exports of live stock, meat. and by-products netted an average of $153,000,000.

The relative importance of Argentina in the world's international trade in corn, wheat, oats, and flaxseed is illustrated in Plate LIX. The information given in Plates LIX and LX is an average of the exports for the 3 years 1911, 1912, and 1913, with the exception of the exports of corn from Argentina, which is an average for the 2 years 1912 and 1913, the exports for 1911 being omitted in this case, owing to the fact that practically the entire crop of 1911 was lost.

Of the surplus corn-producing countries Argentina occupies first place, furnishing 54.9 per cent of the total international trade, the nearest competitor being Roumania, with only 15.4 per cent. While Argentina occupies fourth place as a wheat-export country, furnishing 15.8 per cent of the total supplied by the 11 surplus wheat-producing countries, there is only a difference of 4.1 per cent between Argentina and Russia, the latter occupying first place, with exports equaling only 19.9 per cent. The United States occupies second place, supplying 18.1 per cent, and Canada is a close third, with 17.3 per cent. These four countries furnish 71.1 per cent of the wheat required by importing nations. During 1911, 1912, and 1913 there were exported from Argentina an average of nearly 53,000,000 bushels of oats, or 33 per cent of the total exported by the six surplus-producing countries, Russia being first, with 40.8 per cent. Argentina occupies first place in the exports of flaxseed, shipping 24,489,000 bushels annually, which is 46.9 per cent of the world's trade, the second place falling to British India, with exports equaling 33 per cent.

Although the combined exports of corn, wheat, oats, and flaxseed from Argentina were over 100 per cent greater than the exports from the United States, the average production of these same crops in the United States is approximately 10 times as much as the production in Argentina. This is graphically illustrated in Plate LX, where a comparison is made of the average production, percentage exported, and yields of corn, wheat, oats, and flaxseed for the United States and for Argentina during the years 1911, 1912, and 1913. While the average area devoted to corn, wheat, and oats in the United States is much greater than in Argentina, the area sown to flaxseed in Argentina is practically 50 per cent more than the acreage of flaxseed in the United States. Of the enormous corn production in the United States, which averages nearly 2,850,000,000 bushels, only 1.7 per cent is exported, while Argentina, with an average production of only 246,250,000 bushels, exports 77.1 per cent. The average yield per acre[1] of corn in Argentina for the three years was 27½ bushels, against 27 bushels, the average yield in the United States. The percentage of the wheat crop of the United States exported was 17.5 per cent, while Argentina exported 60.6 per cent. Of the oats produced in the United

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[1] In Argentina the averages are computed on the acreage sown and not on the acreage actually harvested, as is the practice in the United States.

States, only 1.1 per cent was available for export, while Argentina had an average surplus of 82.4 per cent of the crop. In the production of flaxseed, Argentina exceeds the United States by over 10,000,000 bushels, although an average of only four one-hundredths of 1 per cent is exported from the United States, while 81.8 per cent of the Argentina crop is available as a surplus. The average yields per acre of flaxseed are the same in both countries, viz, 7½ bushels. The exceptionally high percentages of grain available for export are explained by the fact that little or no grain is used in Argentina for the fattening of cattle, as the mild climate permits the stock to graze throughout the entire year, and the small population, approximately 8,500,000, needs comparatively little grain for food purposes.

## LAND DISTRIBUTION AND ITS EFFECT ON AGRICULTURE.

The manner in which the public lands were first parceled out led to the acquisition of very large tracts by individuals and corporations, and while Argentina may be called a country of immense estates, there is a notable tendency toward smaller holdings. This is especially true in the cereal region and in certain other parts where special cultivations are carried on, such as in the Province of Mendoza, the seat of the wine industry. Land speculation during the past few years has been an important factor in reducing the size of individual holdings. Properties containing more than 12,500 acres are decreasing quite rapidly, although there are many holdings containing a much greater area than this, even in the cereal region.

According to statistics collected by the Department of Agriculture of Argentina, during the crop year 1912–13 there were harvested, from 84,076 farms in the cereal region, 23,571,849 acres of wheat, flaxseed, barley, rye, or millet, an average of 280.4 acres per farm. Of the total number of farms, 32.62 per cent were operated by the owners, while 67.38 per cent were operated by renters. The reasons for such a high percentage of rented farms are many. Perhaps the most important reasons are, first, the difficulty of acquiring small farms at reasonable prices, although it may be said that this is more apparent than real, as many of the companies and individuals having large tracts are offering land for sale in small farms on reasonably favorable terms. Besides this, there are large tracts of public lands which the Government makes available from time to time. Second, the people who have been attracted to the country are for the most part of two classes—those with little or no capital, who are obliged to begin on rented farms or as "peones," or those with plenty of capital, who have acquired large farms. By practicing thrift to a very high degree, some of the former have been able to purchase their own properties. Among the renting class there are many who have sufficient funds to purchase a small farm, but they prefer to employ their capital on large rented farms rather than to farm on a small scale.

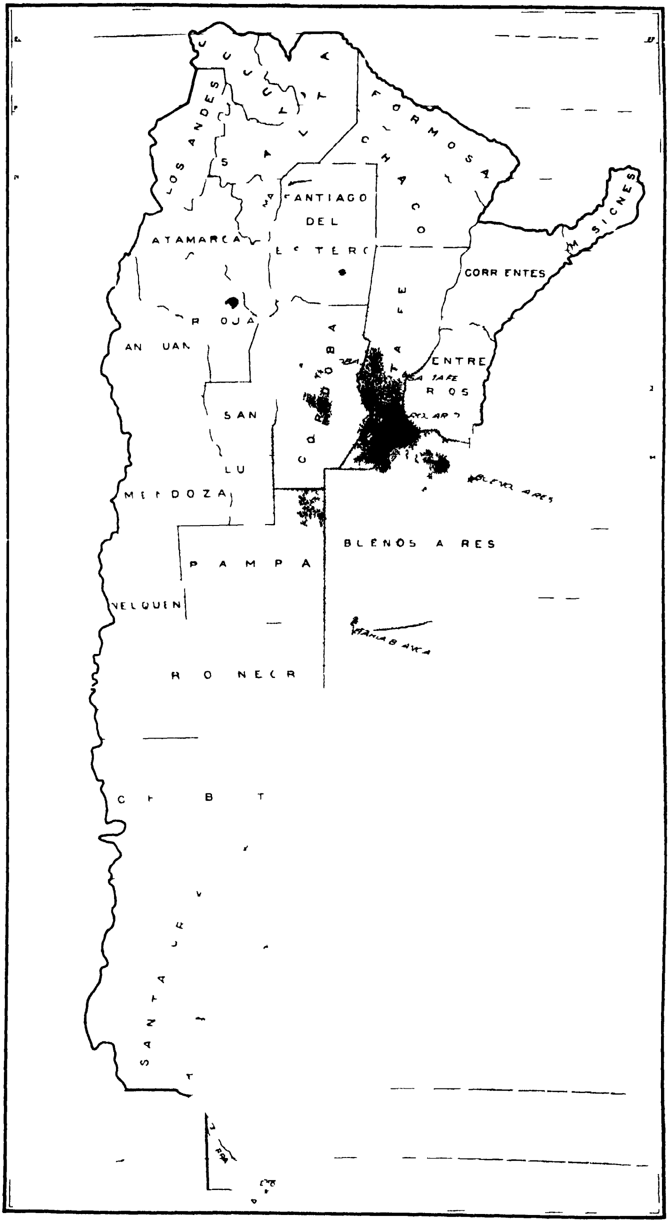
The rented farms contain from 125 to 750 acres, and usually form part of a large tract of land owned by an individual or group of individuals. Such ownership may comprise a great number of farms which are leased to "colonists," the terms of rental being a portion of the crop bagged and delivered at the country stations or a fixed rent in cash. Frequently these properties have formerly been "estancias" (ranches) and have been utilized for stock raising. However, the owners, thinking that larger profits would be derived from cereal growing, have turned agriculturists, subdividing at least a part of their holdings into farms, erecting small huts thereon, and leasing them to tenants. These subdivisions or smaller farms, which are known as "chacras," are frequently designated by number as a matter of convenience. Many farms have been utilized either for the production of corn, wheat, or flax, as the case may be, for a great many consecutive years. The farmer having no fixity of tenure and the soil being very rich in most parts, there is no incentive for him to practice mixed farming, even though he were permitted to do so. In so many cases that it is possible to generalize, he does not even grow his own vegetables and fruits, but purchases these necessities at the country store, paying for them out of the proceeds from the sale of his share of the harvest when marketed.

Sometimes the landowner will be found actively engaged in agriculture, either by exercising direct supervision over the farming operations or by employing competent farm managers who have direct charge of the work. On such properties as these there is usually available the most modern equipment for farming, and the horses, which, almost without exception, are of the finest types, are kept in the best possible condition (Pl. LXI, fig. 1). The methods employed, although peculiar to Argentina, conform to the conditions of the country and are generally attended with a very high degree of success.

## THE PLANTING OF CORN.

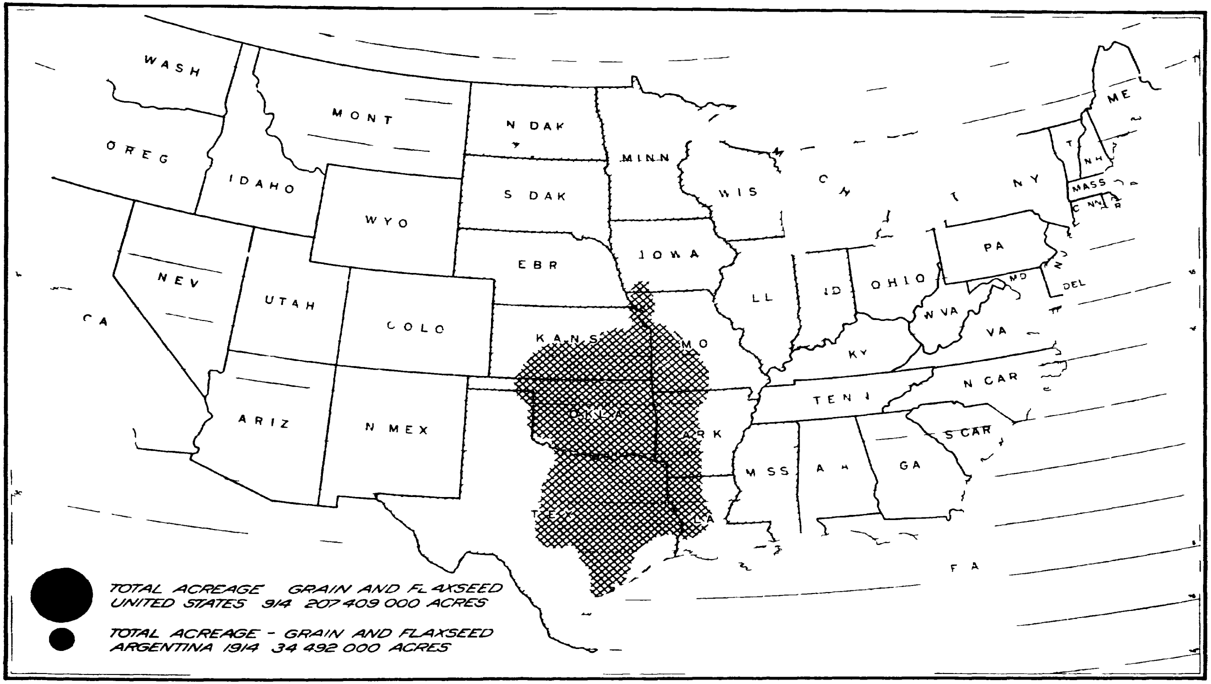
Argentina being in the Southern Hemisphere, the seasons are the reverse of those of the United States. Corn planting may be begun in the northern part of the cereal region as early as the month of August. In the central part of the corn belt the planting begins about September 15 and continues until January 1, the principal part of the planting being done between October 1 and December 15, when corn harvesting in the United States is at its height. The extremely long period of time during which corn may be planted is very advantageous to the corn growers of Argentina. Some farmers make a practice of planting at least a part of the crop early, so that replanting may be done a month or two later, if necessary. This is especially true in the region generally attacked by the locusts. These insects invade the northern part of the cereal zone in the spring, flying in immense swarms from their winter breeding grounds in the warmer sections of the north. At times during flight they are so numerous as to give the appearance of clouds and to obscure the sun from view completely. Great quantities of eggs are deposited in the ground, and as soon as the young larvæ are hatched they begin their work of destruction to growing crops. The Department of Agriculture of Argentina maintains a large organization for the purpose of fighting these pests, and as the result of their efforts thousands of acres of growing crops are saved annually which otherwise would be destroyed.

Corn is planted very largely by listers and by common planters, most of which are imported from the United States. In fact, 70 per cent of all agricultural implements imported into Argentina are manufactured in the United States. The



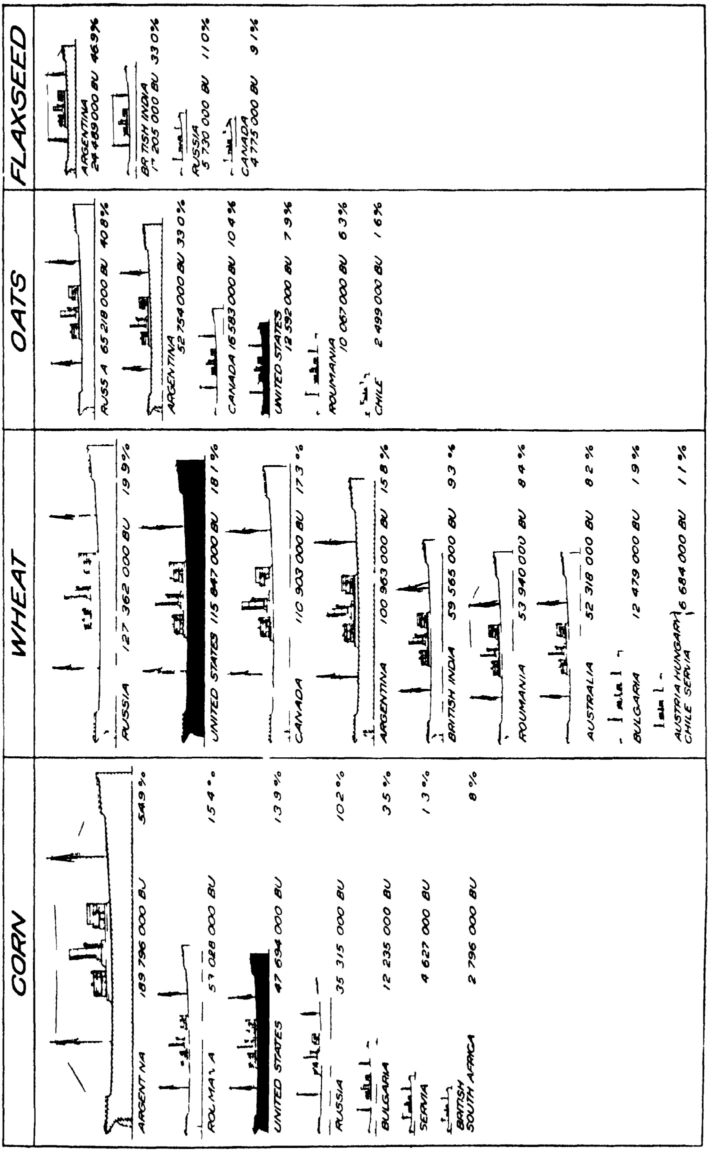
THE CEREAL ZONE OF ARGENTINA, COVERING WHEAT, CORN, FLAX, AND OATS.

Each dot represents 1,000 hectares, or approximately 2,500 acres

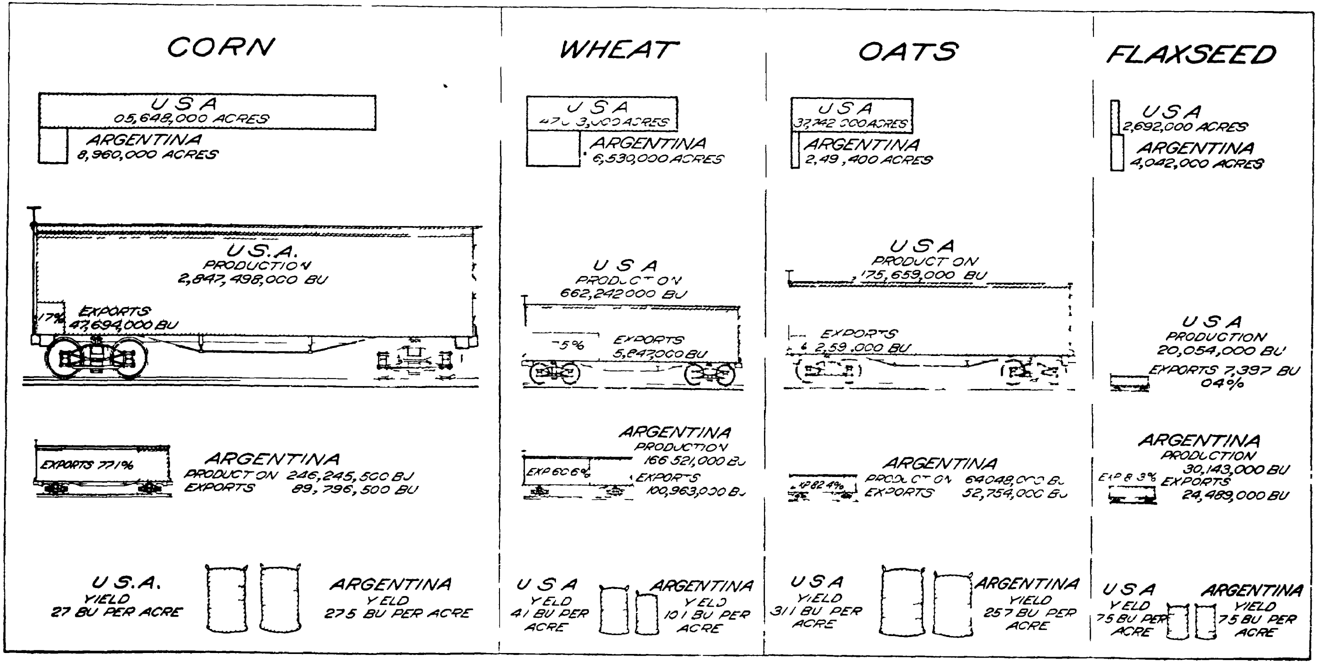


THE CEREAL ZONE OF ARGENTINA, REPRESENTED BY THE HEAVY-SHADED PORTION PLACED IN THE CORRESPONDING LATITUDE IN THE UNITED STATES

The light shaded portion represents the total area of Argentina



AVERAGE EXPORTS OF CORN, WHEAT, OATS, AND FLAXSEED OF THE PRINCIPAL SURPLUS-PRODUCING COUNTRIES DURING 1911, 1912, AND 1913.



AVERAGE ACREAGE, PRODUCTION, EXPORTS, AND YIELDS OF CORN, WHEAT, OATS, AND FLAXSEED IN THE UNITED STATES AND IN ARGENTINA FOR THE YEARS 1911, 1912, AND 1913.

FIG. 1.—BREAKING LAND FOR CORN ON THE ESTANCIA LA CALIFORNIA, PROVINCE OF SANTA FE.

Note the splendid condition of the horses.

FIG. 2.—SHUCKING CORN.

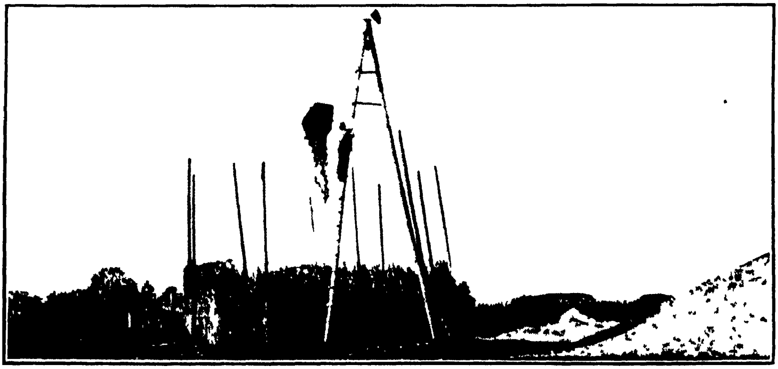


FIG. 3.—FILLING THE "TROJE" (CRIB).

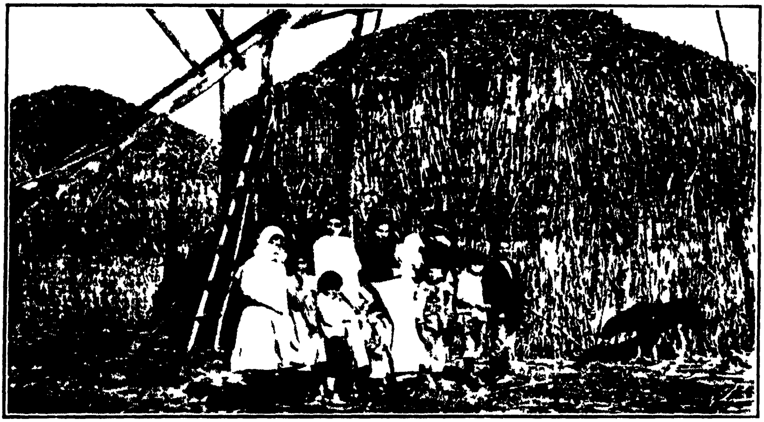


FIG. 1. COMPLETED "TROJES," CONSTRUCTED OF CANE STALKS.
Italian farmer and family are seen in the foreground

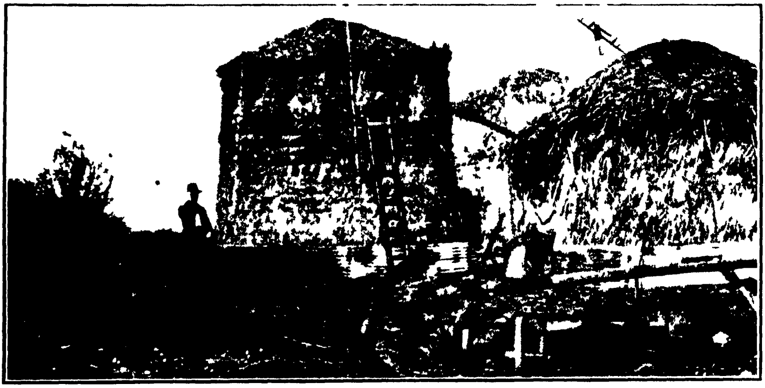


FIG. 2.—"TROJES" CONSTRUCTED OF CORNSTALKS.
Sometimes stalks and husks are used for covering.

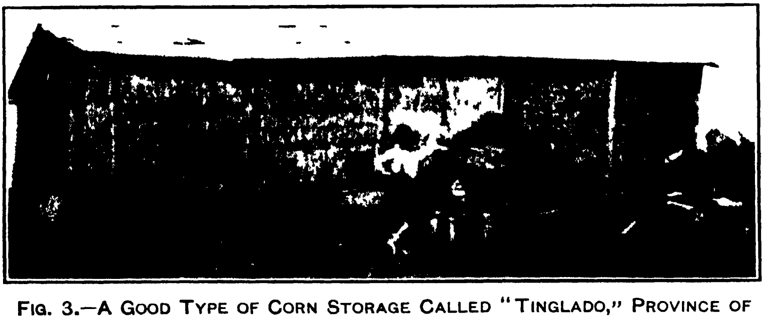


FIG. 3.—A GOOD TYPE OF CORN STORAGE CALLED "TINGLADO," PROVINCE OF BUENOS AIRES.
Note the oven in the foreground, situated about 200 feet from the house.

FIG. 1.—HARVESTING WHEAT WITH AUSTRALIAN COMBINED HARVESTERS AND THRASHERS.

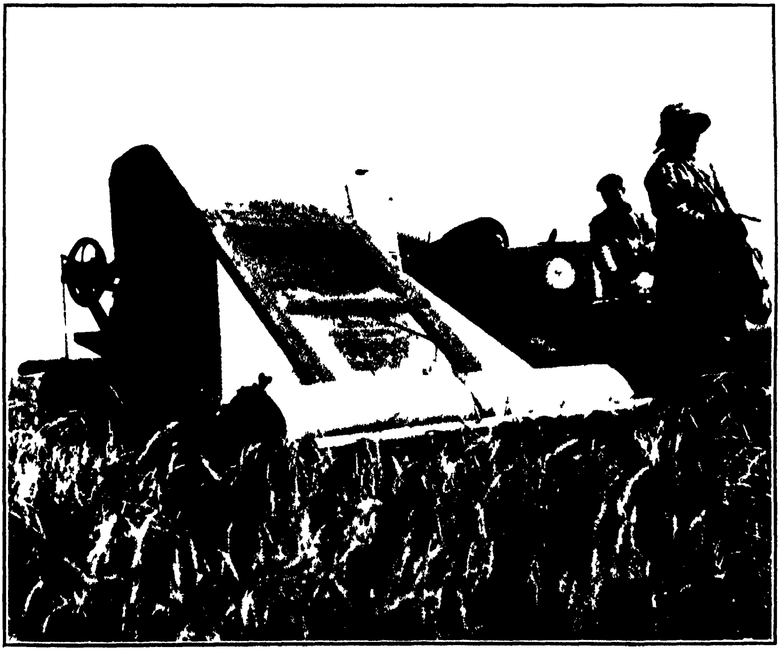


FIG. 2.—NEAR VIEW OF AUSTRALIAN COMBINED HARVESTER AND THRASHER.

FIG. 1.—THRASHING WHEAT FROM STACKS OF HEADED GRAIN.

The straw is being used as fuel

FIG. 2.—GRAIN PILED ON GROUND ON FARM PRIOR TO BEING TRANSPORTED TO STATION

Note the type of cart, also the farmhouse and shed in the background

FIG. 3.—RAIL TRANSPORTATION OF GRAIN IS EFFECTED BY MEANS OF BOTH FLAT AND BOX CARS

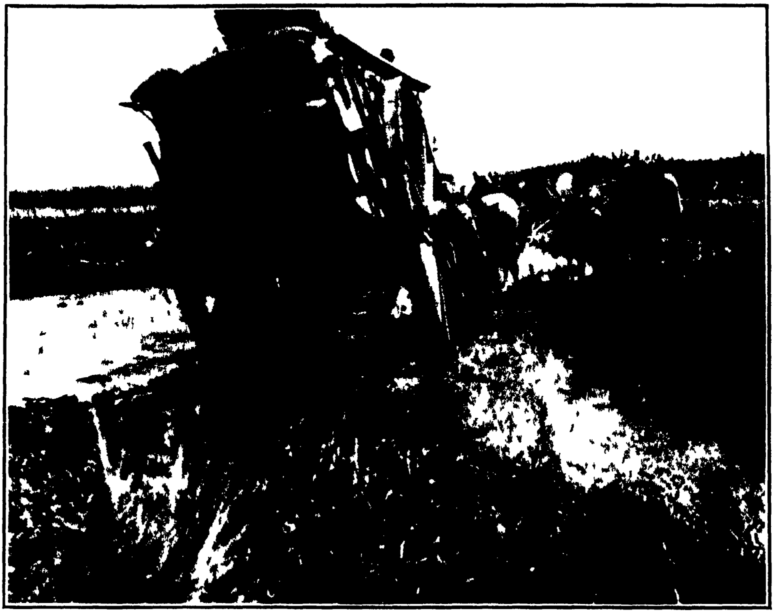


FIG. 1.—HAULING GRAIN TO RAILROAD STATION.

The roads at times are impassable.

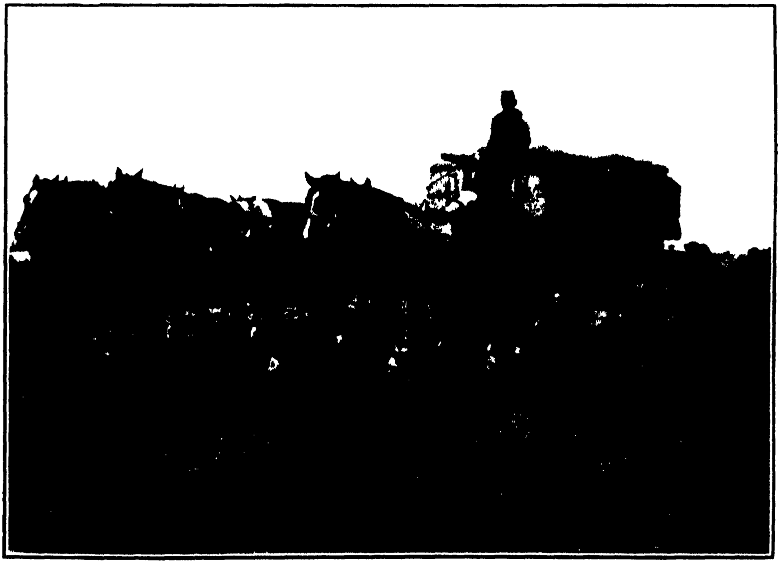


FIG. 2.—TYPE OF WAGON USED IN SOME SECTIONS WHEN THE ROADS ARE GOOD.

FIG. 1.—RECEIVING AND WEIGHING GRAIN AT A COUNTRY STATION

FIG. 2.—SHEDS AND WAREHOUSES FOR THE STORAGE OF GRAIN AT A COUNTRY STATION.

FIG. 3.—GRAIN PILED ALONG RAILROAD TRACKS AT A COUNTRY STATION PRIOR TO BEING SHIPPED TO THE TERMINAL MARKET.

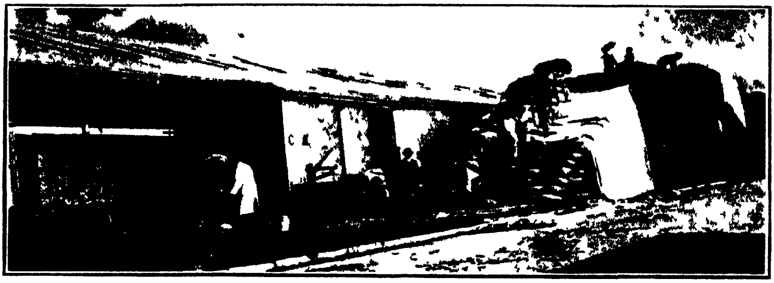


FIG 1.—STORING GRAIN OUTSIDE OF WAREHOUSES AT A TERMINAL MARKET TO AWAIT SHIPMENT TO FOREIGN COUNTRIES

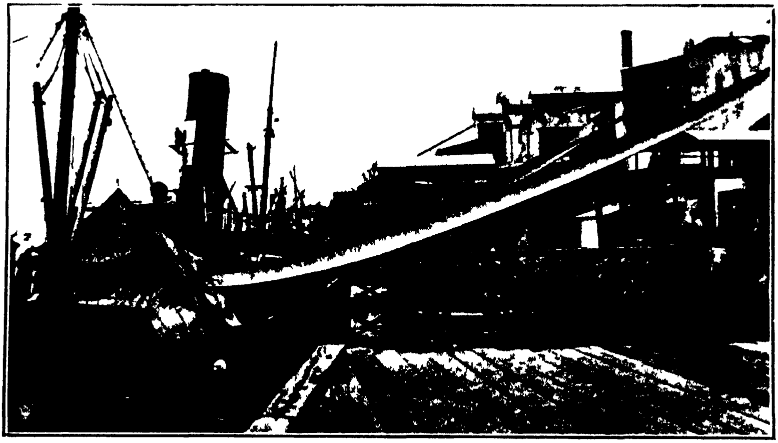


FIG 2—LOADING BAGGED GRAIN INTO VESSELS FROM WAREHOUSES AT ROSARIO

The "canaletas" (chutes) and hatchways are covered with canvas during rainy weather

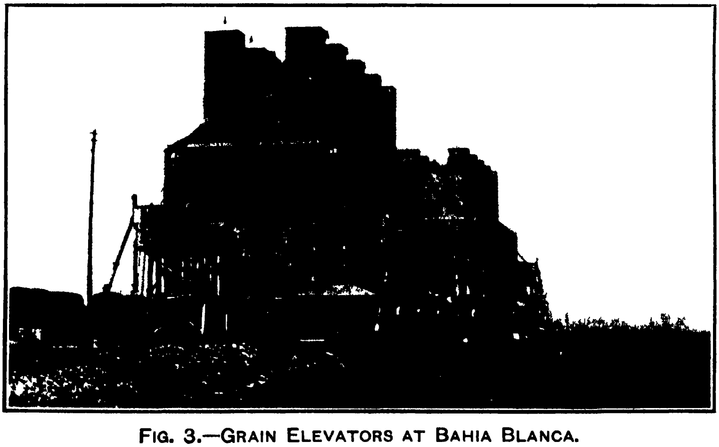


FIG. 3.—GRAIN ELEVATORS AT BAHIA BLANCA.

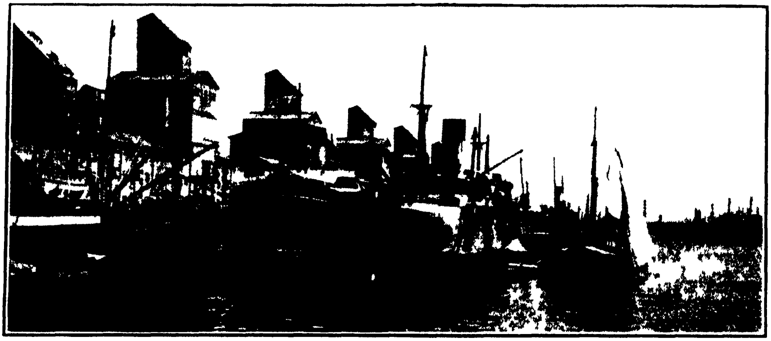


FIG 1 —GRAIN ELEVATORS AT BUENOS AIRES

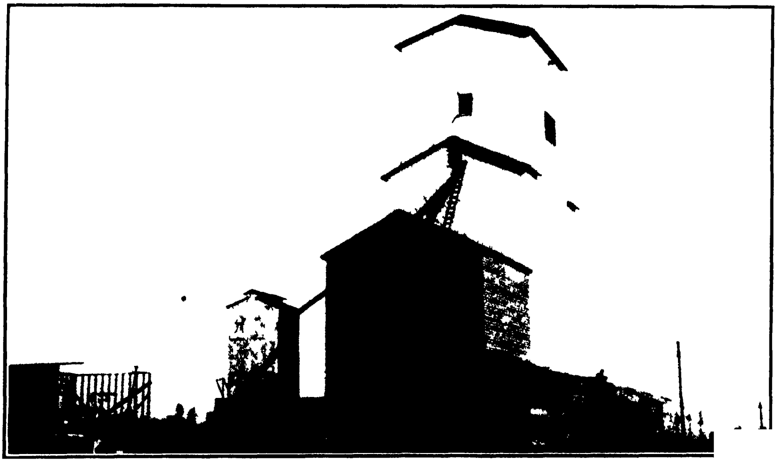


FIG 2.—COUNTRY GRAIN ELEVATOR RECENTLY CONSTRUCTED IN ARGENTINA

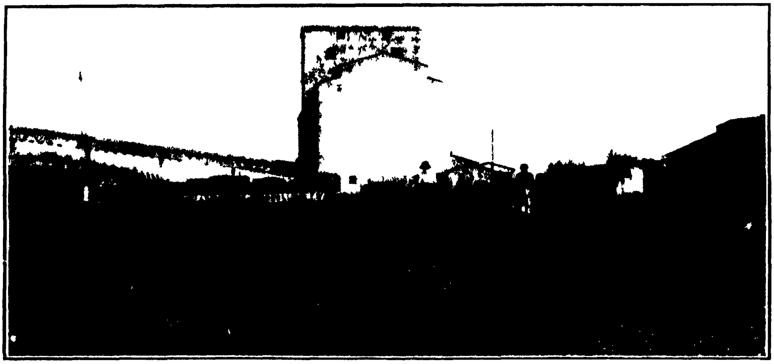


FIG 3.—AN ELEVATOR AT ROSARIO, SHOWING LABORERS IN THE FOREGROUND STIRRING DAMP GRAIN BY WALKING THROUGH IT.

corn is planted in rows. In the majority of cases the rows are from 25 to 30 inches apart, but sometimes the distance between the rows is reduced to 20 inches. The hills in the rows are from 12 to 24 inches apart. Cultivation when practiced can be done only one way, as corn is seldom planted in checkrows.

## CORN HARVESTING AND STORING.

The time required for corn to mature varies considerably with the different varieties and with the section of the country, but generally from 135 to 160 days must be allowed. The harvesting season may be said to be at its height in April and May. Corn in Argentina is shucked from the standing stalks in the field and thrown into baskets, which the shuckers move from place to place as the work progresses. Each basket, when filled, is carried to some convenient point, where the corn is emptied into sacks (Pl. LXI, fig. 2). A number of these sacks are placed together in the field and are later loaded on a wagon and hauled to the "troje" (crib). The trojes are built by placing poles in the ground in the form of a circle. Wires are then strung around on the inside of the poles to hold the corn or cane stalks of which the walls are constructed, as the filling of the troje progresses. These stalks are usually not fastened to the wires, but are held in place by the corn. One method of filling the trojes is shown in Plate LXI, figure 3. The corn in the sacks as hauled from the field is emptied into a box placed alongside of the wagon. This box, filled with corn, is then drawn up over the top of the troje on a wire cable, where it is dumped into the inclosure. Plate LXII, figure 1, shows a completed troje made from cane stalks. Very frequently a small patch of cane is grown for that purpose. Sometimes the trojes are covered with canvas or zinc sheeting, but usually there is no covering at all unless it be of cornstalks and husks or other similar material, as is illustrated in Plate LXII, figure 2.

In the northern part of the Province of Buenos Aires, where many farmers own the land they cultivate, there is to be found a somewhat better type of crib called "tinglado," which is built in a rectangular form, the sides and ends being constructed of corn or cane stalks, but with a good roof of zinc sheeting (Pl. LXII, fig. 3). In a wet season large quantities of maize spoil in the trojes because there is not the proper protection for the grain. During an inspection trip made for the Minister of the Department of Agriculture of Argentina in May and June, 1914, it was found that large quantities of maize stored in uncovered trojes was unfit for market except at very great discounts, it being badly damaged by having molded and fermented, while the maize stored in the tinglados was in very good condition. The average moisture content of the corn in the different types of storage was as follows:

| | Per cent. |
|---|---|
| In trojes without covers | 22.0 |
| In trojes with covers | 18.6 |
| In tinglados | 18.1 |
| In field unshucked | 21.1 |

The weather conditions during 1914 were perhaps as bad as ever experienced in the country, an excessive amount of rain having fallen during the corn-gathering season. The warm climate of Argentina causes the grain to mold very soon, once it becomes damp and wet. The government, however, is carrying on an extensive educational campaign to get the farmers to store their maize in well-covered trojes.

## CLASSES OF CORN.

Flint corn is grown almost exclusively, although several prominent agriculturists are growing some of the more important varieties of American dent corn, mostly for feeding purposes, with considerable success. The chief objection to the growing of dent corn seems to come from the exporters, who claim that it can not be produced sufficiently dry to carry safely to Europe. While perhaps there is not sufficient evidence that dent corn can be produced to better advantage in Argentina than flint corn, it is believed, according to the best information available, that, with the selection of the best varieties and with the proper care in the handling of the crop, dent corn with a sufficiently low moisture content to carry safely through the Tropics can be raised. It is probable that with the development of the hog-raising industry, which has heretofore been neglected, a greater quantity of dent corn will be produced.

Some of the more common varieties and types of corn grown in Argentina are shown in the frontispiece of this volume, where a comparison is made with Boone County White and Brewer's Yellow Dent corn, grown in the United States. The ears of the flint corn represented in this illustration were secured from a lot of corn placed on exhibition at a rural show held in Argentina. The two ears representing the corn grown in the United States were selected from samples furnished by the Office of Corn Investigations of the United States Department of Agriculture.

The flint corn generally produced may be divided into two kinds, white and yellow. The white is the least grown, and only comparatively small quantities are found in commerce. Of the white corn the type known as "morocho" is mostly grown. The kernels are smooth, flinty, and considerably smaller than the kernels of the white dent corn of the United States. Another type of white corn is known as "perla," the ears and kernels of which are only about half the size of the "morocho." The yellow corn, of which there are several types, is by far the most important in the commerce of Argentina. The variety known as "maíz de harina" is a very starchy corn of a light-yellow color, or, as the name implies, corn for flour. The ears and kernels are larger than those of the true flint corns. This variety is grown only in small quantities in the extreme northern part of the grain belt, is used chiefly for making meal, and is consumed locally, little or none being found in commerce. The most common varieties of yellow corn are "Canario," "Húngaro," "Cuarentón," "Lombardo," and "Piamontés." These varieties constitute by far the greatest part of the corn exported. The "maíz polenta" is a Piedmontese variety and takes its name from polenta, a kind of mush or porridge which is eaten extensively by the Italians. After a few years this variety degenerates, losing its original red cólor and becomes nearly yellow. The "maíz cuarentón," the kernels of which are very small and flat, presents a very fine appearance, especially when shelled, and frequently commands a premium over the ordinary yellow corn in some foreign markets in that the small kernels make it especially desirable for poultry and pigeon food.

## THE SEEDING OF WHEAT, OATS, AND FLAX.

Wheat is sown as early as May 15 and as late as September 15. The greatest quantity is seeded during July and August, which is the middle of the Argentine winter. In the center of the wheat belt the harvest begins usually in December, depending on the time of sowing and on the weather conditions prevailing throughout the growing season. During the crop year of 1914–15 the harvest did not begin until January, and in some parts not until February. This, however, was an exceptionally late season.

The flaxseed grown in the northern part of the cereal zone is usually harvested a little earlier than the main part of the oats or wheat crops. The harvesting of oats takes place at about the same period as wheat, the seeding being done in May, June, July, and August.

## HARVESTING AND THRASHING.

The harvesting of wheat is accomplished by means of headers, binders, and Australian combined harvesters and thrashers. The latter are sometimes called "stripper harvesters" from the fact that the heads are stripped from the stalks without cutting the plants. The machine is equipped with a comb having fingers which are set just far enough apart to permit the plants to be drawn through until the heads are reached, at which time the latter are stripped from the straw by the aid of beaters revolving within a drum situated above the rear of the comb. While passing through the machine the wheat is separated from the heads, cleaned, and finally deposited in a box having a capacity of several bushels, which is attached to the machine. From this box the wheat is sacked and left at convenient points in the field. Some machines are equipped for sacking the grain as it is thrashed, the bags being deposited in the field as they are filled. From 6 to 8 horses are generally used to draw the machine, and the operation may, under favorable conditions, be accomplished by one man, although at times an additional man or boy is required to assist in driving the horses. Where several machines are employed in one field, an extra man or two is required for sewing and piling the bags of grain. While there are many disadvantages connected with the use of the "stripper harvester," the great rapidity with which the work is done and the saving in cost of labor in gathering the crop are greatly in its favor when the conditions are right for its use. The essentials for the successful operation of this type of harvester are that the land should be reasonably level, the crop standing up well in the field, and the grain thoroughly ripe and dry. As soon as the crop reaches the proper stage there is a necessity of completing the harvest as quickly as possible in order to prevent excessive loss due to the shattering of the grain. An illustration of this type of harvester is shown in Plate LXIII, figures 1 and 2. Grain harvested with a binder is usually thrashed from the shocks. Headed grain is stacked, generally without any covering (Pl. LXIV, fig. 1). Much damage is sometimes done to the grain in stacks. This was the case in 1915, when it was practically impossible to move the thrashing outfits, due to the extremely bad condition of the roads, so that much of the grain remained in the fields for several months before thrashing. According to the Department of Agriculture of Argentina, there were many stacks unthrashed on May 26, a very unusual occurrence, as generally the thrashing is completed by the last of February.

## CLASSES, VARIETIES, AND TYPES OF WHEAT.

Although the wheats of Argentina are generally classed as soft wheats they more nearly resemble our varieties of hard red winter. The principal varieties are Barletta, Ruso, Italiano, Frances, Rieti, Tuzela, and Saldomé. These varieties have been grown for many years, and it is an unfortunate fact that very little attention has been paid to the selection of seed wheat, so that the wheats have become very badly mixed, it being almost impossible to find pure types. Barletta is practically the only variety recognized in commerce, the others being shipped simply as wheat or "trigo de pan," which means wheat for bread. The "Bolsa" of Rosario has designated a special type of wheat, as "Rosafé," which is simply a commercial name given to the better wheats grown in the Rosario district and sold to Europe under that name. A number of varieties have been mixed and grown together in certain sections and erroneously called "Hibrido" (hybrid). The cultivation of this wheat has increased quite rapidly, some agriculturists believing that they had a new variety. This wheat is also called "Pampa," from the fact that it is grown extensively in the Territory of La Pampa Central. Another variety grown only in small quantities, mainly in the northern part of the cereal zone and in the Province of San Juan, is known as "Candeal." This wheat, while probably a durum, more nearly resembles the wheats known commercially in the United States as Wild Goose wheat. The Candeal wheat is used almost exclusively in the manufacture of edible pastes, and very little of this class of wheat ever reaches the export markets.

## MARKETING.

After shelling or thrashing, the grain is placed in bags and hauled directly to the railroad station, or it may be piled on the ground to await such transportation (Pl. LXIV, fig. 2). Many farmers do not haul their own grain to market, but hire regular teamsters to perform this service for a certain price per 100 kilos (220.5 pounds), the cost varying according to the length of haul and the condition of the roads. The prevailing tariff for hauling wheat is from 1¾ cents to 5¾ cents per bushel for each league. Generally, the grain is transported to market in carts and wagons having immense wheels and drawn by horses or oxen. Anywhere from 8 to 16 horses are hitched to one wagon, pulling from every available place where a hook or ring may be fastened. This type of wagon is said to be necessary, owing to the frequently bad condition of the roads (Pl. LXV, fig. 1). During the periods of dry weather the roads usually become fairly good, and in such cases it is possible to use a wagon with smaller wheels. Such a wagon is shown in Plate LXV, figure 2.

On arrival at the station, the grain is weighed on a small platform scale and inspected and received by the local buyer, after which it is stored in a warehouse or shed or piled alongside the railroad tracks to await shipment to the terminal market (Pl. LXVI, figs. 1, 2, and 3).

The only means of drying damp grain which has begun to show signs of deterioration is to spread it out on the floor of the warehouse or on a canvas placed on the ground outside the warehouse, as commercial grain driers are not yet available.

In transporting grain from country stations to the export markets both box cars and flat cars are utilized. The latter when loaded with grain are covered with tarpaulins, as shown in Plate LXIV, figure 3. Very little grain in Argentina is hauled by rail for a distance greater than 300 miles. The freight tariffs for hauling grain on the railroads are based on the metric ton of 2,205 pounds. The information given in the table herewith will give an idea of the rates in force in 1914 on one of the principal lines which traverses the corn belt extensively.

*Examples of railroad freight rates on corn in Argentina.*

| Approximate distance from shipping point to port. | Rate in cents (U. S.) per 100 pounds. | Approximate distance from shipping point to port. | Rate in cents (U. S.) per 100 pounds. |
|---|---|---|---|
| *Miles.* | | *Miles.* | |
| 10 | 3.87 | 252 | 13.26 |
| 48 | 5.90 | 305 | 14.65 |
| 98 | 8.52 | 355 | 15.42 |
| 127 | 9.98 | 403 | 16.17 |
| 148 | 10.52 | 470 | 17.35 |
| 174 | 11.22 | 502 | 17.87 |
| 200 | 11.87 | 575 | 19.01 |

Grain received at the export market may be loaded directly aboard ship by means of electric elevators leading from the car door to the hatchway or carried aboard by "peones" (laborers). If the grain is to be shipped in bulk, the bags are opened at the hatchway. If shipment is not made immediately, the grain is taken from the cars and stored in warehouses or piled outside (Pl. LXVII, fig. 1). At many places on the River Parana, where the banks are high above the water, the loading is done by means of "canaletas" (chutes), leading from the warehouses to the ship's deck. During rainy or damp weather the chutes and hatchways are covered with canvas to prevent the bags from becoming wet (Pl. LXVII, fig. 2).

## GRAIN STORAGE FACILITIES.

While there are a few terminal grain elevators located at Rosario, Buenos Aires, and Bahia Blanca, only a comparatively small amount of grain is handled through this type of storage except at Bahia Blanca (Pl. LXVII, fig. 3), where the capacity of the elevators is much greater than at Rosario or at Buenos Aires (Pl. LXVIII, fig. 1). The elevator storage capacity for the whole country, all of which is located in the ports, possibly would not exceed 8,000,000 bushels. The total grain storage available, including sheds and warehouses throughout the country, is approximately 211,000,000 bushels, of which 16,800,000 is located at the export points.

A number of projects for the construction of country and terminal elevators have been discussed. Recently a project was submitted to the National Congress, which calls for the construction of a system of public elevators. At the present time there are possibly not more than three or four country elevators in the whole of the grain belt (Pl. LXVIII, fig. 2), and these have been built only within the past few years. This is a question of great importance to the Argentine producer, as without elevators no facilities are available for the proper cleaning of grain or for the conditioning and handling of damp or deteriorated grain. The heavy discounts assessed against damp grain are largely due to the costly and impracticable method of drying by spreading the grain out on the ground (Pl. LXVIII, fig. 3). It would be impossible to give an accurate statement of the losses to the producers caused by the system of handling grain in bags instead of the bulk system, as employed in the United States and Canada. That the bag system is expensive is fully realized when it is considered that the sacks alone cost the producer from 12 to 15 cents each, and to this must be added the cost of handling, which is necessarily greater than if handled through elevators in bulk.

## CLASSIFICATION, INSPECTION, AND GRAIN CONTRACTS.

In Argentina there is no system of grading grain such as is known in the United States. Practically all of the export grain is handled by five or six large export firms, some of which have their agents in the principal grain-shipping stations, who buy direct from farmers, local dealers, and commission merchants.

The "Cámara Gremial de Cereales" of the commercial organization of Buenos Aires known as the "Bolsa de Comercio" has formulated a contract for the use of its members in the buying and selling of grain. According to the general rules governing this contract, wheat is bought and sold to be sound, dry, and clean; to have a certain specific weight, the standard being 80 kilos per hectoliter, or approximately 62.2 pounds per Winchester bushel. Deliveries may be made of wheat weighing 5 pounds less than standard or other specified weight, with corresponding discounts. Likewise, a premium is given if the wheat weighs more than that specified in the contract.

Flaxseed sales and purchases are made on the basis of 4 per cent foreign material, with a tolerance up to 8 per cent. The Cámara Gremial makes up a monthly average of the samples received, which forms the basis of quality.

Oats are sold on the basis of average quality, with an allowance of 6 per cent of black oats, 3 per cent of foreign material and 3 per cent of barley being considered as the basis for foreign material, other grains, etc. Oats containing a maximum of 5 per cent of foreign material, 5 per cent of barley, and 10 per cent of black oats are deliverable, with corresponding discounts. When the specific weight is declared in the contract, a maximum tolerance, equivalent to approximately 3.1 pounds per bushel, is allowed, with corresponding discounts. The usual standard for specific weight is equivalent to 36½ pounds per Winchester bushel.

Maize is sold on the basis of the terms sound, dry, and clean, and in practice the following additional classifications are usually made:

(1) Sound, dry, and clean, according to season.
(2) "Fresco," i. e., damp maize, but cool. The usual discount is 7 cents per bushel.
(3) "Tale Quale" includes corn which may be very damp, but free of heat and badly mold-damaged grains. The usual discount is 10¾ cents per bushel.

Grain is sold to Europe chiefly on the La Plata rye terms contract, which provides that the seller shall guarantee the condition of the grain on arrival in Europe. Differences arising out of the contract are arbitrated in Europe, usually in London. Another form of La Plata contract is known as the "Tale Quale contract," which stipulates that shipment must be made in good condition but "tale quale" as regards condition on arrival. The quality of the grain shipped on either contract must be a fair average of the season's shipments or in accordance with sealed samples, taken at the time and place of shipment.

## WAREHOUSE CERTIFICATES.

In October, 1914, a national law, known as the law of warrants and certificates of deposit, was enacted. By the provisions of this law certificates of deposit and warrants may be issued by duly authorized warehousemen, provided that they have previously conformed to certain specified conditions as established by the Government for the grain which they have taken in store. Such certificates of deposits and warrants are negotiable and may be discounted at the banks or by the concerns issuing the certificates. This law, which applies to practically all products which are stored, promises to be of immense benefit in the commercial handling of grain.

# IMPROVEMENT AND MANAGEMENT OF NATIVE PASTURES IN THE WEST.

(Plates LXIX–LXXII.)

By JAMES T. JARDINE, *Inspector of Grazing, U. S. Forest Service.*

## THE CALL FOR PASTURE.

A PROBLEM of steadily increasing importance to almost every owner of live stock in the range States is the problem of improving and efficiently managing native pasture lands. Indirectly, but not less surely, it affects the meat and wool industries and every consumer of their products.

For many years in the West there was room for the expansion of the range stock industry. Large areas of unused grazing lands awaited the coming of the stockman. Only part of the pasturage which nature had provided in such seeming abundance was utilized by the herds which grazed in the western country. But this is no longer the case. From the desert to the line of perpetual snow there is now little unused range. Grazing, too, has in most cases been unrestricted, with consequent injury to the forage growth. This has gone on until it is evident that, to maintain the production of even the present number of live stock under the range industry, run-down ranges must be improved and an efficient system of native pasture management worked out. In short, it will be necessary not only to build up the range lands, but to keep them at their maximum carrying capacity once that is done. There is urgent call for such measures now, but this call will become steadily stronger as settlement advances into the stock country and range pasture is needed for the farm herd to supplement the pasturage and feed crops produced on the cultivated land.

A very few figures will show the magnitude of the pasture problem west of the Mississippi. There practically all of the land in farms classed by the census as unimproved, some 252,000,000 acres, or more than 60 per cent of all such land in the United States, is of value for grazing and in use by stock. Of the public lands, some 110,000,000 acres within the National Forests carry live stock, mainly as summer range. Outside the National Forests, practically all the public land, not less than 300,000,000 acres, is used for grazing purposes.

All told, then, the problem of improving and maintaining native pastures in the range States extends, in a broad sense, to something over 660,000,000 acres of land—nearly one and one-half times the area in the United States that is cultivated and cropped.

## CONDITION OF NATIVE PASTURE LANDS IN THE WEST.

What has taken place, and is still taking place, on many of the privately owned native pastures is a gradual but steady decline in their carrying capacity. Data collected by the Kansas Agricultural Experiment Station show that in that State in 1910 the average area of grazing land required per steer was 3.80 acres and in 1914, 6.55 acres, an increase of 72 per cent. Along with this go a corresponding increase of 31 per cent in the pasture rent per steer and a decrease of 24 per cent in the income per acre. Kansas has 2 acres of pasture land to every 3 acres cultivated and cropped. Though largely unsuited for cultivation, these pasture lands have reached a total valuation of approximately $400,000,000 for grazing purposes. This figure gives some idea of how important, from a money standpoint, is the problem of bringing the lands back to their former degree of usefulness and keeping them there.

What is true of Kansas is in all probability true of other western States where large areas of privately owned pasture lands have been in more or less continuous use for spring and summer grazing. This would not necessarily be the case, however, with private pastures in connection with farms in the range States, where the unimproved part of the farm or ranch is used in late fall, winter, and a short time in spring to supplement public domain and National Forest range, with the result that the stock are off the private pastures during a good portion of the growing season and the vegetation has a chance to mature and so to stand heavy grazing in fall and winter. Where this is so, the unprotected public lands must be looked to for a comparison with the private pastures which are used throughout the season each year.

The average carrying capacity of the 300,000,000 acres of public lands outside of the National Forests is to-day probably 25 per cent below what it was originally. That this estimate is conservative can be told by the degree of improvement in forage crops and increase in carrying capacity which follows restricted grazing or total protection of the range.

The lands used for grazing purposes within National Forests are gradually being brought back to something like their original condition by the grazing management which has been developed during the past 10 years. Between 1907 and 1914 the average acreage per animal was reduced about 14 per cent. As a matter of fact, the average increase in carrying capacity of ranges which were run down in 1907 may be set at not less than 30 per cent. In many instances the lands now bear several times the amount of vegetation which existed when they were first placed under management.

Decrease or increase in carrying capacity is the direct but not the only measure of deterioration or improvement in a pasture. The character and amount of vegetation has a great deal to do with the producing capacity of the lands and with the control of mud-laden flood waters which mean damage, or even destruction, to lands and improvements further along the drainage. Evidence of such damage, varying from shoe-string rills to gullies and large washes, is common enough, not only on the unprotected public lands, but on the rolling and hilly privately owned pastures. With decrease in the cover of vegetation, rapid run-off and erosion is increased, and the surface drainage carries off not only the much-needed moisture but the soil as well. While the damage thus brought about is generally realized in a vague way, the tendency seems to be to underestimate it, just as it is the tendency to neglect the pasture lands as things which can take care of themselves.

## CAUSES OF PASTURE DETERIORATION.

Overstocking and premature grazing go together as the most direct causes of deterioration in western pastures. Lack of well-distributed watering places and unnecessary or improper handling of the stock, though less important than overstocking and premature grazing, often operate to bring about a marked reduction in carrying capacity.

### OVERSTOCKING.

Upon the public lands outside of the National Forests, and upon the National Forest lands before they were placed under management, the only limit to the number of stock grazed was usually the number available. No consideration was given to the matter of carrying capacity. This same practice continued to some extent even after the lands passed to private ownership and were placed under fence. The more common practice on private lands, however, has been to put on all the stock that the range would carry and turn them off in fair to good condition, in the belief that if the stock came off in satisfactory shape the range was not overstocked or injured. This is true, provided the season of grazing is limited so as to give the vegetation a chance to do more than merely produce a few leaves, which are eaten as soon as they are long enough to crop. It is not true if the stock are turned on the pasture lands as soon as there is enough green feed for them to live on and kept there, to the apparent capacity of the pasture, as long as they can remain in fairly good condition. The fact that this has been the method followed accounts for the decrease in carrying capacity of many private pastures, when the owners believed that the lands were not overstocked. Animals which are allowed to graze the green feed of the choice forage plants nearly as fast as it grows may, for the time being, get enough to eat, but to rob the plants continuously of this foliage robs them also of their laboratory for manufacturing plant food, and they are gradually starved out of existence. The change, perhaps, is not noticeable during any one year, but in a period of 5 or more years the better forage plants are greatly reduced, if not killed out, and their place taken by less desirable grasses and weeds.

The condition of the stock, therefore, is not in itself a safe way to judge whether a range is overstocked or not. It works well enough on winter pastures which have been protected during the growing season, and it works moderately well on National Forest ranges where the stock are not put on until the vegetation is well along in its short period of growth. It can be used also on spring and fall pastures where the stock are taken off early in the growing season and put back after the vegetation has matured. It does not work, however, where the stock are on the pasture to its apparent capacity during all or the greater part of the growing period of the main forage plants. Where this is the case the number of stock must be reduced materially below the number which can be kept in good condition, if the pasture is to be kept up.

### PREMATURE GRAZING.

Until a few years ago premature grazing was generally understood to mean grazing in early spring, while the ground was still soft enough to make it certain that a great deal of the vegetation would be destroyed or badly injured by trampling. It is now realized that this is only a limited view. If the maximum stand of forage plants which are naturally dominant on a pasture is to be maintained under annual grazing, it would seem that the land should be grazed only after approximately the time of year when these plants mature their seeds. This, however, is not practicable. Therefore, to approach it as nearly as possible consistent with the whole plan of live stock, farm, and pasture management is the problem to be worked out. When the season of grazing that will give the vegetation the greatest chance to grow, consistent with the profitable handling of the stock, is decided upon, then, and not until then, can the number of stock a given pasture will carry be consistently estimated. It should be determined finally by careful observation of the range, not the stock, over a period of from 3 to 5 years.

### WATERING PLACES.

Lack of well-distributed watering places, each with ample water for the stock which may drift to it, results in overgrazing and excessive trampling around the watering places which do exist. The area of pasture injured in this way will depend upon the distance between water and upon topography. At best there will be slight damage, especially in cattle pastures. In extreme cases observed on cattle range in comparatively level country the denudation or material decrease in vegetation gradually extends outward from the water a distance of at least 6 miles. On many of the smaller private pastures decrease in carrying capacity due to this cause may seem negligible. It operates, however, to reduce the average productiveness of the whole pasture, just as small uncultivated spots bring down the average yield of a cultivated field, and efficient management must take it into account.

## WHAT IS BEING DONE TO IMPROVE NATIVE PASTURE LAND.

If run-down pastures or ranges are to be brought up to their original or maximum productiveness, they must, of course, be seeded to forage plants. This must be done either artificially with seed available on the market, or by managing the pastures so they will reseed themselves with the better species of existing native vegetation. If artificial seeding were economically practicable, as it is in the case of cultivated lands, the depletion of pastures would be a matter of less concern.

For many years the United States Department of Agriculture has conducted experiments in artificially reseeding worn-out or run-down native pasture lands in the West, but practical results are limited to a small acreage of lands where soil and moisture conditions are very favorable, and even on such lands it is frequently a question whether the increase in forage, or the saving of time in securing revegetation, will justify the expense of seeding.

The improvement and maintenance of the forage crop, then, must be accomplished largely through management which will meet the requirements of the desirable native plants so that they can maintain themselves and reseed as often as necessary. The gist of the whole matter is that the requirements of the vegetation which makes up the forage crop on the pasture lands must be studied and taken into account in working out a system of grazing management.

Studies of this kind were undertaken by the Forest Service of the United States Department of Agriculture in 1907 on depleted ranges of a National Forest area in northeastern Oregon, with the object of developing a plan of using the range which would harmonize the requirements of the vegetation and the requirements of successful livestock management in the greatest possible degree. The requirements of the important range forage plants and the essential factors, including grazing, which affect their growth and reproduction, were carefully studied over a period of 5 years.

With the data thus secured, a system of grazing known in the Forest Service as "deferred grazing" was planned and put into effect on a practical scale. It was found, for example, that approximately one-fourth of the grazing sea-

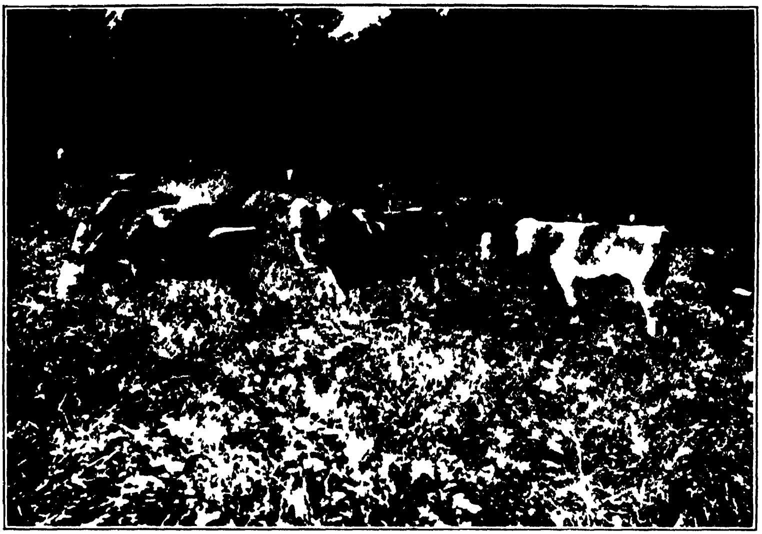


FIG. 1.—EARLY SUMMER GRAZING ON NATIONAL FOREST RANGE IN MONTANA.

The carrying capacity of National Forest ranges has been increased 14 per cent by improvement in management since 1907, and in addition the ranges now produce a large percentage of fat stock where formerly only feeders were turned off.

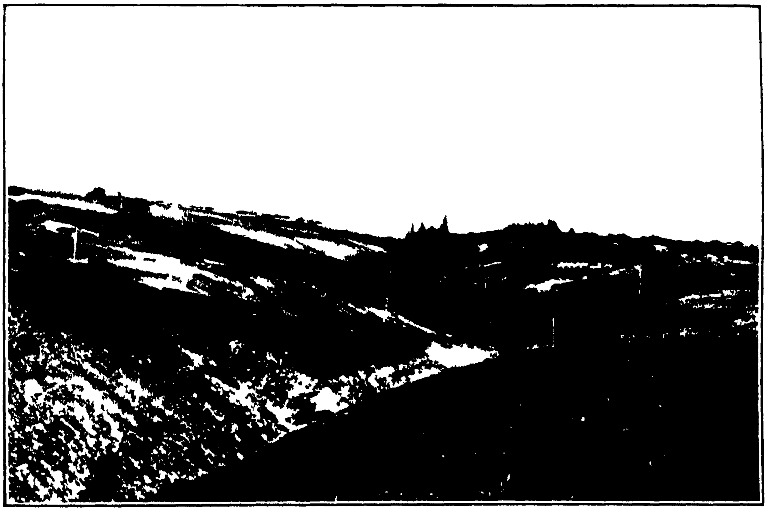


FIG. 2.—AREA LARGELY DENUDED OF VEGETATIVE COVER.

From this area of approximately 10 acres at an elevation of 10,000 feet in Utah a rainfall of 0.70 inch, which fell in 55 minutes on July 21, 1915, washed off 716.92 cubic feet of air-dried sediment—about 25 tons.

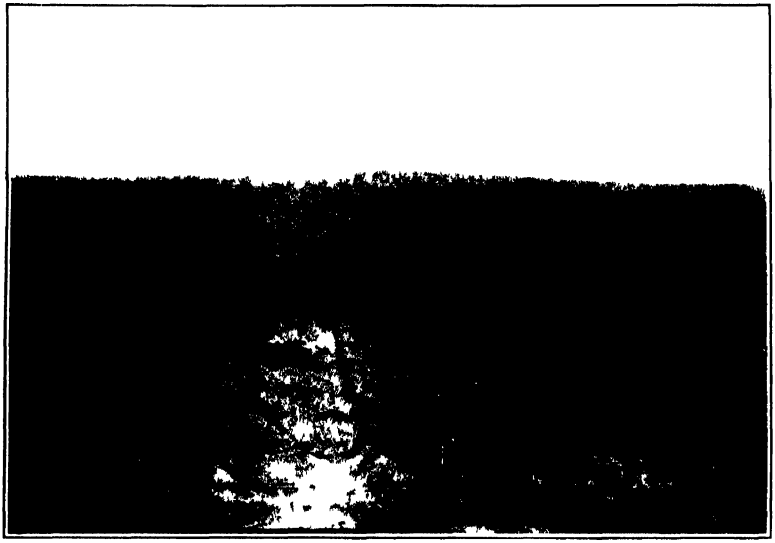


Fig. 1.—Grassland in New Mexico Eroding as a Result of the Vegetation Having Been Destroyed by Overgrazing.

Reestablishment of the vegetation and checking erosion are difficult on such areas.

Fig. 2.—Grama Grass Range on the Jornada Plains of New Mexico.

This range has improved [illegible]3 per cent since April, 1913, primarily as a result of light stocking during the growing season.

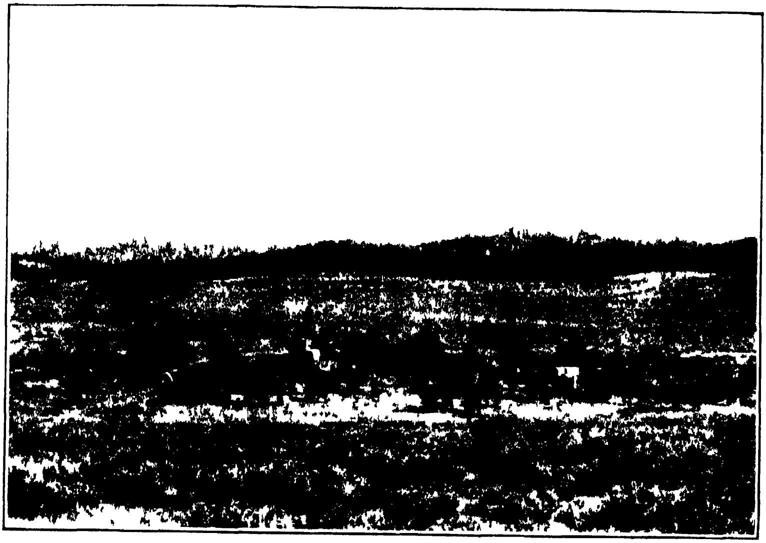


FIG. 1.—CATTLE RANGE IN CALIFORNIA WHICH INCREASED 15 PER CENT IN CARRYING CAPACITY BY APPLYING THE DEFERRED GRAZING SYSTEM FOR THREE SEASONS.

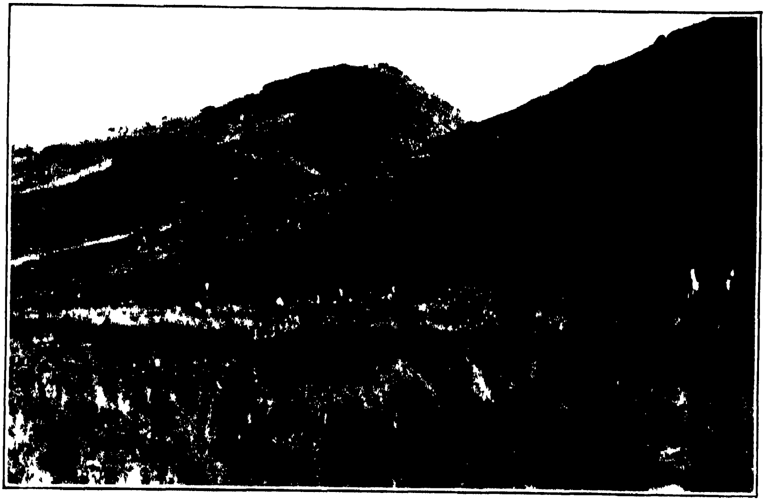


FIG. 2.—FOOTHILL GRASSLAND OF OREGON GRAZED IN SPRING AND FALL BUT ALLOWED TO REST DURING THE MAIN PART OF THE GROWING SEASON, AND AS A RESULT IS IN EXCELLENT CONDITION.

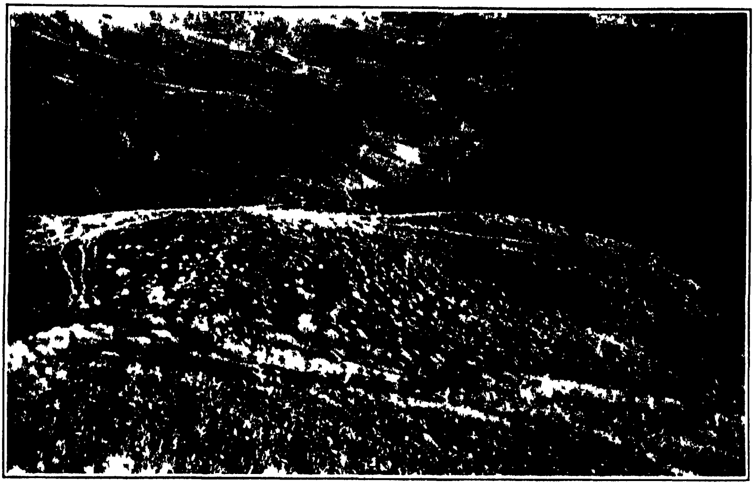


FIG. 1.—FOOTHILL GRASSLAND OF OREGON REDUCED TO THREE-TENTHS OF A GROUND COVER AS A RESULT OF YEARLONG GRAZING FOR A NUMBER OF YEARS.

A great deal of the fine surface soil has been washed off. The remaining bunches of grass are protected against grazing, as shown in the figure following.

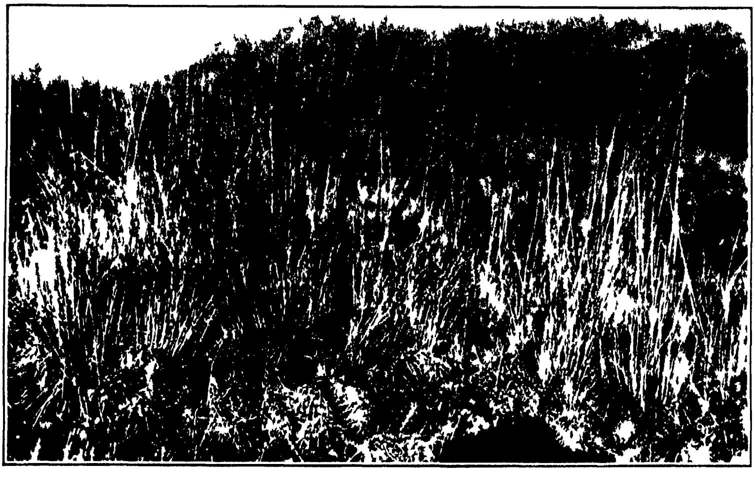


FIG. 2.—THE GRASS REMAINING ON THE RANGE SHOWN IN THE PRECEDING FIGURE IS PROTECTED AGAINST GRAZING BY PRICKLY PEAR.

son remained after the important range plants had matured seed. Accordingly, an area equivalent to one-fourth the carrying capacity allotted to a band of sheep was protected against grazing until the important plants on it had matured seed. After seed maturity the first year the area was heavily grazed, so that the sheep might aid in planting the seed by trampling it into the ground. During the second year, or during the first season after a crop of fertile seed was produced, the area protected the first year was again protected until after seed maturity, when it was only moderately grazed in order to give the seedling plants from the first year's seed crop a chance to develop a good root system before they were subjected to trampling. Where the vegetation at the beginning was vigorous enough to produce a crop of fertile seed the first year, the one-fourth of the range selected for reseeding was protected until after seed maturity for two seasons only. It was then grazed early in the season, and another one-fourth was reseeded by keeping the stock off until after seed maturity each year for two years. In the same way each one-fourth of the range was reseeded naturally, without depriving the stock of the forage on any part of the range any year.

Where the vegetation was badly overgrazed at the beginning it was found that two seasons of protection until after seed maturity was necessary before the original plants became vigorous enough to produce a crop of fertile seed. In such cases it took 4 years to accomplish what was accomplished in 2 years where the original vegetation was vigorous enough to produce a crop of fertile seed the first season of protection.

A study was made to determine the improvement in vegetation secured under this plan of management as compared with similar range grazed throughout the season each year, and also with fenced areas not grazed at all. At the end of the third year it was found that the reproduction from seed was five and one-half times greater on the lands grazed after seed maturity each of the three seasons than on the areas totally protected against grazing, while the reproduction of good forage species was much greater.

It was found that establishment of seedlings depends very largely upon the thoroughness with which the seed is planted. Similarly, it was found that nearly all fertile seeds will germinate on the surface of the ground, but the resulting plants are unable to extend their root systems deep enough to reach the moist lower soil, so that where the surface layer of soil dries out early in the season, as it does on most of the range lands, the young plants die from drought. This is what happened on the lands totally protected against grazing, and as a result a large percentage of the reproduction was made up of less valuable plants, the seeds of which are provided with contrivances which work them into the ground. On the area grazed after seed maturity the sheep trampled a good deal of the seed into the ground and reproduction as a consequence was much better.

Following the Oregon experiments the system of deferred grazing has been tested out elsewhere on both cattle and sheep ranges, and both practically and experimentally, with results that confirm those secured in Oregon. In a three-years' test on early summer overgrazed sheep range in Wyoming, the total vegetation on range grazed each year after seed maturity increased at least 100 per cent, and of this at the end of three years 80 per cent was made up of the best forage plants. On an adjoining area protected against grazing for three seasons the total vegetation increased 80 per cent, while the proportion of desirable forage plants at the end of the test was only about 25 per cent. Adjoining range, grazed season-long each of the three years, had only one-half as much total vegetation as the area grazed each year after seed maturity, not more than 22 per cent of which was made up of the best forage plants.

On desert grass range of the Jornada Plains in southern New Mexico an area of 35,686 acres was fenced in April, 1913. During the main summer growing seasons of 1913 and 1914 it was stocked with cattle only to about one-fifth to one-third of its carrying capacity, in order to give the vegetation a chance to develop and produce seed. During the remaining 8 months or so of each year the area carried stock to about its existing capacity. In the summer of 1915 the actual number of good forage plants per unit area, according to experimental count, was 33 per cent greater on the fenced area than on the outside range. Further, the height growth of the vegetation in the pasture exceeded the growth of that outside by from 2 to 6 inches. When the area was fenced in 1913 it was in poorer condition than the outside range is at present, for the latter has recuperated as the result of two exceptionally good years for forage growth in New Mexico. The improvement in the pasture is largely the result of protection during the summer growing season, and shows what can be accomplished even where growing conditions are less favorable than on the majority of pasture lands.

The principles of deferred grazing are being applied on National Forest ranges as rapidly as possible, and the results in practice bear out those secured experimentally. Where it is not possible to defer grazing until the vegetation matures seed, it is planned to give each part of the range in turn its chance for the maximum undisturbed growth consistent with use. It is firmly believed that the maximum continuous carrying capacity of the range can not be maintained without the application of the principle of deferred grazing.

## SUGGESTIONS FOR IMPROVING AND MANAGING NATIVE PASTURES.

The principles just discussed may be summarized into the following points for application in the management and improvement of native pasture lands in the range States, especially lands under fence:

(1) Avoid grazing any of the pasture while the ground is wet in spring and the principal forage plants are just beginning growth.

(2) Limit the number of stock to what it is believed the whole area will support, at least in good condition for feeders.

(3) Apply the principles of deferred grazing as nearly as possible.

(4) Control and distribute the stock by fences, well-distributed watering places, and salt troughs, so as to minimize handling, natural travel, or congregating in large herds. In other words, work for open, quiet grazing, uniformly distributed over the entire area.

(5) Watch the vegetation on the area as a whole to find out whether the best forage plants are increasing or decreasing, and increase or decrease the number of stock as may be necessary to bring the pasture, or each compartment of it, to its maximum forage production.

With the limited information available, it is difficult to set a time limit for the protection of the pasture lands before grazing begins in the spring. In the arid and semihumid sections stock should probably be kept off for approximately 2 weeks after growth of the main forage plants begins. Where moisture is abundant throughout a long growing season, this feature is not so important. If the pasture land is an important part of the farm, it will in most cases pay in the end to feed the stock the extra 2 weeks in the spring, in order to give the vegetation a chance to get a good start. This period of protection is merely tentative, and may be materially changed as a result of further experiment and observation. The essential point is that some measure of protection at the beginning of the growing season is essential in intensive pasture management.

With grazing restricted at the beginning of the season, it is believed that when the stock is allowed to run over the whole of the pasture, limiting the number to what the area will carry and turn off in good feeder condition, is sufficient protection against overstocking to begin with.

As an illustration of the practical application of deferred grazing, take, for example, a pasture of 600 acres. It should be divided by cross fences into, say, three compartments of approximately 200 acres each, arranged so as to give the best distribution of water and shade. Beginning in 1916, for example, area No. 1 should be grazed first, No. 2 second, and area No. 3 should not be grazed until the important forage plants have set seed. It may then be grazed heavily. In 1917 area No. 2 should be grazed first, area No. 1 second, and area No. 3 should again be protected until the important forage plants have set seed, and should then be grazed only moderately, in order to avoid as far as practicable the destruction of young plants by grazing or trampling. In 1918, area No. 1 should be grazed first, area No. 3 second, and area No. 2 should be protected until the important forage plants have set seed. It should then be grazed heavily. In 1919, area No. 3 should be grazed first, area No. 1 second, and area No. 2 should again be protected until the plants have set seed, and then be grazed moderately. In 1920, area No. 3 should be grazed first, area No. 2 second, and area No. 1 protected until the important forage plants have set seed, and then be grazed heavily. In 1921, area No. 2 should be grazed first, area No. 3 second, and area No. 1 moderately grazed after the plants have set seed. The period 1922 to 1927 should be a repetition of the plan for 1916 to 1921, except that in 1922 area No. 2 should be grazed first instead of second, and area No. 1 second instead of first, in order to give the young plants on area No. 1 the additional advantage of protection during the fore part of the season, so that they may become thoroughly established. The management throughout the period is more concretely shown by the following table:

*Order of grazing.*

| Year. | Area No. 1. | Area No. 2. | Area No. 3. |
|---|---|---|---|
| 1916 | First | Second | Third. |
| 1917 | Second | First | Third. |
| 1918 | First | Third | Second. |
| 1919 | Second | Third | First. |
| 1920 | Third | Second | First. |
| 1921 | Third | First | Second. |
| 1922 | Second | First | Third. |

By following this plan the various portions of the range will be given not only equal chance to reseed but equal protection against grazing during the fore part of the growing season. Should one part of a pasture be in greater need of building up than another, it may be advisable to vary the plan in a way to secure a maximum crop over the whole area as soon as practicable. It is possible, too, that the character of the vegetation, the soil, and moisture conditions may be slightly different on different parts of the area, so that one part will be more in need of protection than another. A knowledge of the individual case is necessary in order to decide what variation should be made, but if the principles involved are clear, this should not be a difficult matter.

The advantages of readily available water and salt and of quiet handling, with equal chance for the individual animals in feed lots, are well known to stockmen. The same advantages apply to the animals in the pasture, and the object should be to obtain them as far as practicable.

The same observation should be given the pasture lands to determine both change in amount of vegetation and in species as the farmer gives his alfalfa land to determine the density of the stand and the amount of weeds present. To facilitate observations of this character, a plot about 2 rods square should be fenced in each typical part of the pasture. Stock should be kept off these check plots at all times, so that the vegetation will have the best opportunity for growth. By careful comparison of the forage within these protected areas and on the adjoining pasture, it will be possible at any time to tell whether the pasture is or is not approximately at a maximum, both as to density of vegetation and species. For accurate comparison, the number of plants, size of plants, and general vigor for each species per unit area should be determined; but generally careful observation without counts should show whether or not the best practical results in carrying capacity are being secured. The loss of pasturage on the inclosed plots and the cost of the fences and their maintenance will amount to but little charged against the pasture as a whole.

The acreage of native pasture lands where it will pay to seed cultivated forage plants are so limited by soil and moisture conditions that definite suggestions as to where such seeding will pay are not given here. A better plan will be for the individual to ask advice of the United States Department of Agriculture or the State agricultural experiment station for his own specific case.

It has been pointed out that while the damage due to erosion is generally recognized, the character and extent of this damage are not always fully appreciated. The rills, gullies, and larger washes are plain enough, but the removal of a sheet of good soil from the surface of large areas by wind, water, and other factors is apparent only after careful observation. Yet it is important. The first step in checking damage of this character is to restore the native vegetation of the pasture. The suggestions already made relative to grazing management should accomplish this, if it can be accomplished. When the vegetation on the area as a whole has been restored, engineering work to fill up washes and gullies may be advisable. Engineering methods without restoration and protection of the vegetative cover, however, will be expensive and not productive of the best results.

# HOW SEED TESTING HELPS THE FARMER.

By E. Brown,
*Botanist in Charge of the Seed Laboratory, Bureau of Plant Industry.*

EVEN under the most favorable conditions crop production is uncertain, depending as it does on so many factors partially or wholly beyond the control of the farmer. Agricultural advancement is largely a matter of overcoming the factors of uncertainty.

The natural conditions of climate must be accepted as they are, although their effect, as well as the condition of the soil, can be modified through drainage, irrigation, cultivation, fertilization, and crop rotation. One of the chief factors in crop production, however, and one which can be fully controlled, is the quality of the seed planted.

The farmer who uses seed that has been carefully tested and found to be of good quality knows that under favorable conditions a good stand will be obtained in the field. It is poor economy for him to invest the money and labor necessary for the production of a crop and overlook the possibility of failure through the use of poor seed.

While valuable varieties and strains of our cultivated crops are being brought into use through breeding, selection, and introduction, comparatively little is being done to improve the quality of the seeds of those commonly cultivated varieties with which most of our farming land is seeded.

The judging of seed corn and testing it for germination have come to be the chief features of corn shows and play a prominent part in all present-day agricultural education, but the seeds of the small grains have received too little attention, while grass, clover, and other forage-plant seeds have been for the most part neglected. It is in connection with these latter seeds, with which the farmer is not familiar, that seed testing is of most service to agriculture.

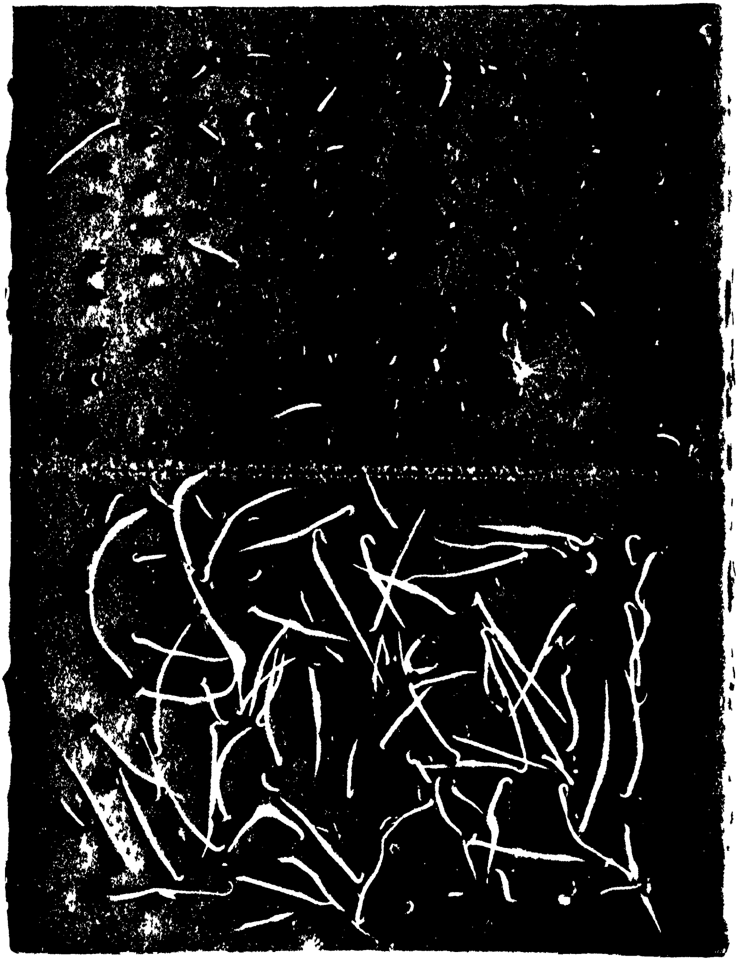
The greater part of the seed sown on American farms, aside from cereals, corn, and cotton, is not produced on the farm where it is used, but is gathered together from all parts of the world by wholesale seedsmen, is mixed, recleaned, and graded to suit the demand at the time, and then distributed to the localities where it is used. The farmer is told little about the place of origin and often less about the quality of the seed purchased.

Seed testing furnishes a means of pointing out to the farmer certain features that determine to a large extent the value of any particular lot of seed. Few farmers will buy seed if they know that only one-third or one-fourth of it will grow, but seed of this quality is being imported and sold to our farmers every year. The farmer who buys clover or alfalfa or timothy or orchard-grass seed but once a year is not able to judge the quality of the seed for himself. He is in need of information as to the kind or variety he is buying, whether it is adulterated with cheaper and perhaps useless substitutes, what proportion of it may be expected to produce plants under favorable field conditions, and whether it contains the seeds of weeds which may become troublesome. All of this information is necessary before he can be reasonably sure of producing a good crop. Under present conditions this information is not generally furnished by seedsmen in such a way that it is of service to the farmer.

## INEFFICIENT SEED LAWS.

Twenty-six States have passed laws regulating the sale of seeds, and in most of them certain labels indicating quality are demanded, but the information thus conveyed is meager at best and is required only when sales are made within the State. In only one State has there been an attempt to apply the provisions of the law to keeping out of its boundaries seeds which would not be permitted sale within them. No statement of quality is required with the large proportion of agricultural seeds sold from one State into another.

Seed testing gives the seedsman accurate information about the seeds he is selling and makes it possible for him to conduct his business with that intelligent interest which has too often been lacking, but which is rapidly becoming necessary to the successful seed merchant. Through the increased



GERMINATION OF IMPORTED CRIMSON CLOVER SEED

*A* Worthless seed—mostly dead, *B* good seed—germinated well

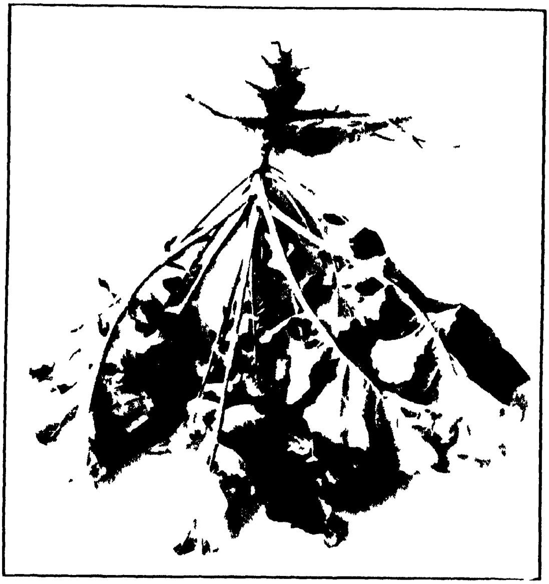


FIG 1 — WINTER RAPE—GOOD GROWTH OF SUCCULENT FORAGE.

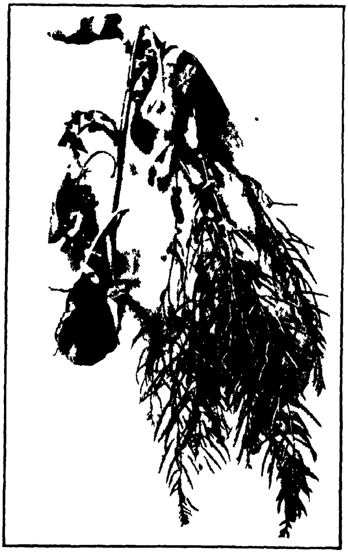


FIG 2.—OIL SEED RAPE—GONE TO SEED, LITTLE FORAGE LEFT.

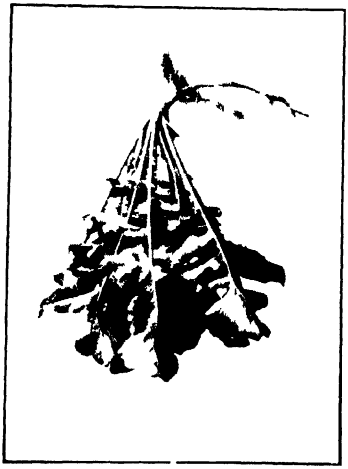


FIG 3 —TURNIP RAPE—LITTLE FORAGE COMPARED TO WINTER RAPE; LEAVES THIN AND HAIRY.

PLANTS FROM THREE TYPES OF SEED IMPORTED AS RAPE.

Photographed two and one-half months after seeding.

attention that is given to the importance of good seed the general quality of commercial seed has greatly improved, the demand for high-grade seeds is increasing, and more of the refuse which was formerly sold as seed is now cleaned out and destroyed; but there is still much to be desired. Under present conditions each farmer must get for himself information as to the quality of the seed he is sowing; otherwise, poor stands and crop failures will frequently follow.

## IMPORTED SEEDS.

Through the enforcement of the seed importation act the quality of the seeds brought into the United States has greatly improved. This act prohibits the importation of the seeds specified only when they are adulterated or unfit for seeding purposes as defined in the act, but it does not prohibit the importation of seed that is dead or that contains large quantities of chaff and dirt. Before this act became a law it was not uncommon for red and alsike clover and alfalfa seed which was worthless for seeding purposes to be imported. The United States had become a favorite market for European seed screenings. Conditions are now changing, and seedsmen are commonly making their foreign purchases on the basis of the seed importation act, so that few lots of low-grade seed unfit for entry under that act are being offered for import. When an occasional lot of such seed is now brought to the United States it is either returned to the country of origin or cleaned in bond under customs supervision and the cleanings exported or denatured.

Tests of samples of foreign seed received through the Customs Service show that between July 1, 1914, and October 1, 1915, over 300,000 pounds of light-weight orchard-grass seed were imported which contained an average of only 28 per cent of seed, the remainder being chaff and dirt. Nearly 2,500,000 pounds of the crimson-clover seed imported during the 6 months following April 1, 1915, contained an average of only 54 per cent of live seed, and of this the germination of 500,000 pounds averaged but 38 per cent. (See Pl. LXXIII.) In other words, enough orchard-grass seed was imported to sow 20,000 acres and enough crimson-clover seed to sow 120,000 acres, none of which could be expected to produce a stand in the field when used at a normal rate of seeding. Dead crimson-clover seed can not be effectively separated from live seed, and both the crimson-clover and orchard-grass seed were imported at such prices that the good seed in these shipments cost more than the best grade of seed on the market at the time. All of this crimson-clover seed of low vitality and chaffy orchard-grass seed is sold to the farmer without recleaning. While the individual farmer can protect himself from the use of such worthless seed by having each lot tested before he sows it, such seed should not be allowed to come into the country. Its importation can result only in profit to the dealer selling it and the loss of the crop to the farmer who sows it.

The United States annually imports from 1,000,000 to 3,000,000 pounds of winter rape seed, most of it coming from the Netherlands. Owing to an embargo placed on the exportation of rape seed by the Netherlands in the spring of 1915, seed was imported as rape from other countries, including France, Argentina, and Japan. This has resulted in seed of three distinct plants being imported and sold as winter rape, as follows: (1) Winter rape, a biennial forage crop with fleshy, succulent leaves, furnishing an abundance of forage the first year and seeding the second year after planting; (2) an oil seed-producing plant, similar to winter rape in the early stages, but maturing seed in midsummer of the first year of growth; and (3) an oil seed-producing turnip, blossoming the second season after sowing and differing from the common garden turnip especially in having no thickened root. This plant has thin, hairy leaves, furnishing little forage compared with winter rape. (Pl. LXXIV.) To point out to the farmer and to seedsmen the identity of the seeds of such substitutes is one of the important applications of seed testing.

## ADULTERATED SEEDS.

It has been an all too common practice for seedsmen, either knowingly or unknowingly, to sell seed of a cheaper kind for that of a higher price when they are similar in appearance.

Red-clover seed has been adulterated with millet and yellow trefoil, Kentucky bluegrass with Canada bluegrass, orchard grass with meadow fescue and rye-grass, hairy vetch with spring vetch, and redtop with timothy. Alfalfa has been adulterated with yellow trefoil or sweet clover, and now that the relative prices are reversed sweet-clover seed is being adulterated with alfalfa seed. During the spring of 1915 there was a profit of $75 to $100 a carload on each 1 per cent of timothy sold as redtop. Over a hundred lots of adulterated redtop examined contained an average of 12 per cent of timothy seed.

After the United States Department of Agriculture collected each kind of seed and published for the first time the analyses of those lots found to be adulterated, with the names of the seedsmen who sold them, a marked decrease in the adulteration of that particular seed followed the next season. In the case of the different kinds of seeds investigated, however, the seed trade has not changed its practice until after such publication has been made.

While all crop failures due to the use of poor seeds may be avoided by having seeds tested before sowing, such tests should be made in the most practical and economical way. Seed should be tested, as far as possible, in large lots in the hands of the wholesale dealer, a copy of the analysis accompanying each sale as a guaranty of quality, instead of repeatedly testing seed from the same bulk for individual buyers.

Seed testing helps the farmer (1) by telling him what part of the seed he is using is alive, of what kinds it consists, and how many weed seeds it contains, thus removing one of the important elements of uncertainty in crop production, and (2) by furnishing the means of discovering and putting a stop to the sale of adulterated and low-grade seeds.

## PUBLICATIONS ON SEED TESTING.

The following publications contain valuable information upon the testing of seeds, and may be obtained free, so long as the supply lasts, upon application to the Chief of the Division of Publications, United States Department of Agriculture. Those to which prices are attached may be purchased from the Superintendent of Documents, Government Printing Office.

Farmers' Bulletin 253. The Germination of Seed Corn.

Farmers' Bulletin 260. Seed of Red Clover and Its Impurities. 5 cents.

Farmers' Bulletin 306. Dodder in Relation to Farm Seeds.

Farmers' Bulletin 382. The Adulteration of Forage-plant Seeds.

Farmers' Bulletin 428. Testing Farm Seeds in the Home and in the Rural School.

Farmers' Bulletin 676. Hard Clover Seed and Its Treatment in Hulling.

Bureau of Plant Industry Bulletin 58. The Vitality and Germination of Seeds. 10 cents.

Bureau of Plant Industry Bulletin 83. The Vitality of Buried Seeds. 5 cents.

Bureau of Plant Industry Bulletin 111, part 3. Imported Low-grade Clover and Alfalfa Seed. 5 cents.

Bureau of Plant Industry Bulletin 131, part 1. The Germination of Vegetable Seeds. 5 cents.

Bureau of Plant Industry Circular 101. The Germination of Packeted Vegetable Seeds.

Department Bulletin 138. Commercial Turkestan Alfalfa Seed. 5 cents.

Department Bulletin 169. Injury by Disinfectants to Seeds and Roots in Sandy Soils.

Department Bulletin 186. A Method of Fumigating Seed.

The various State agricultural colleges also may have free bulletins on testing seeds.

# STORIES OF THE ATMOSPHERE.

By Roscoe Nunn, *Section Director, Weather Bureau.*

KNOWLEDGE of the realm of the air often gives intellectual pleasure and furnishes a delightful stimulus to the study of nature in general. Possibly our eagerness to realize large and definite commercial values out of the study of the weather has caused us to overlook other values, not so tangible, perhaps, but which may, nevertheless, be very real. Science is not utilitarian only. If it were limited to that its wings were clipped.

There is no day without its story of the air. To one able to read the weather map published daily by the Weather Bureau, each day holds some interesting atmospheric event. Moreover, the weather map is more interesting and significant than a mere statement of weather conditions in so many words. The reader of the weather map interprets it for himself, to an extent depending on his knowledge of meteorology and weather forecasting, and thus his study not only enables him to use the official forecast more intelligently when he has pecuniary or other interests at stake, but also affords him pleasurable intellectual exercise.

There are many phases of the subject of meteorology that may be comprehended merely from careful reading, and in almost any one of the many books on meteorology will be found a series of interesting stories. The object of this article is not so much to tell these tales as to suggest their titles and give glimpses into a few of the many stories that are available to those who desire to read them, either in books or in the air itself.

There is an interesting story about how the earth came to have any atmosphere at all; another of how the motions of the earth affect the atmosphere; another how the sun controls atmospheric temperatures; another of the effect of mixed land and water areas upon the distribution of temperature and moisture; another of the pressure and circulation of the atmosphere, embracing the wind systems of the globe.

There is the story of the water vapor in the atmosphere, and of the clouds, which are the children of the sun and the sea, and the story of precipitation (rain, snow, sleet, hail, dew, and frost). There is the story of the dust in the atmosphere, much of which, "meteoric dust," comes from interplanetary space; and there is the story of the colors of the sky and the many wonderful and beautiful phenomena of light. There are the daily stories of storms and of warm and cold waves, and there is the story of climates, that bear so vitally on the destinies of races.

One of the most absorbing of these stories, perhaps, is that of the development of the science of meteorology—how one discovery after another was made, how instruments were invented to aid in the discoveries, and how all the great Governments to-day maintain weather services for the public benefit.

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EXPLANATION OF PLATE

(F) But little is known of space above 24 miles The aurora, volcanic dust, and meteors have given some information Meteors, or shooting stars, are masses of matter that come from outer space into the earth's atmosphere and, by friction with the air caused by their high velocity (12 to 50 miles per second), are heated white hot, which makes them visible. They may be seen almost any clear night. They appear mostly in the region between 30 and 100 miles above the earth. It is obvious that they would not become visible at those elevations if there were no air present.

(E) The greatest height reached by sounding balloons is about 22 miles. Considerable data relative to atmospheric pressure, winds, temperature, and moisture up to the 20 mile level have been obtained by means of instruments carried by these balloons.

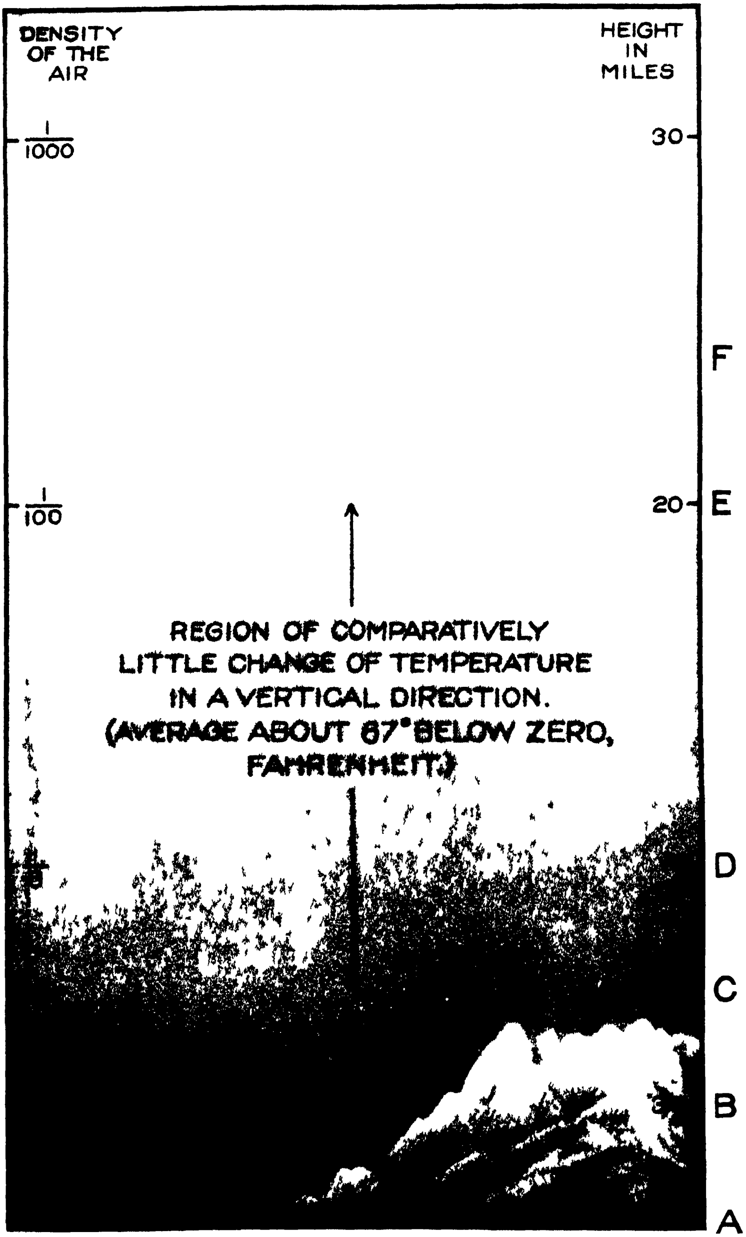
(D) Seven-eighths of the atmosphere (by weight) lies below the level of 10.2 miles. This is about the upper limit of water vapor and clouds in the tropics.

(C) Three-fourths of the atmosphere (by weight) lies below the altitude of 6 8 miles. This level in middle latitudes is near the bottom of the "stratosphere," or region where the temperature ceases greatly to fall with increase of altitude, but remains nearly constant, or even rises considerably at times, with increase of altitude. The "stratosphere" extends upward to an unknown height. Storms operate mainly below this level. This region has been explored frequently by sounding balloons carrying registering instruments. Manned balloons have gone as high as 6 5 miles. Kites carrying instruments have gone as high as 4.5 miles.

(B) Although some mountain peaks are considerably higher than this level (3.6 miles), this is about the limit for permanent human habitation. The greatest altitude reached by any mountain climber is about 4.5 miles. (The top of Pike's Peak, Colo., is about 2.7 miles above sea level.)

(A) Sea level. The atmosphere is densest at the bottom. The sea-level plane is usually considered the bottom of the atmosphere, but there are depressions in the earth much below the level of the oceans, such as the Dead Sea, Death Valley, Cal., etc. In these low places the atmosphere is denser than at sea level.

PLATE LXXV


DENSITY OF THE AIR
HEIGHT IN MILES
1/1000
30
F
1/100
20
E
REGION OF COMPARATIVELY LITTLE CHANGE OF TEMPERATURE IN A VERTICAL DIRECTION. (AVERAGE ABOUT 67° BELOW ZERO, FAHRENHEIT.)
D
C
B
A

VERTICAL SECTION OF THE ATMOSPHERE

The shading represents approximately the relative density of the air at different altitudes

## THE WILL-O'-THE-WISP OF SCIENCE.

Being invisible and, in the ordinary sense, intangible, the air is one of the most difficult and illusive subjects for the scientist to investigate first hand. If one could only see the processes that go forward in its depths or could get outside of it and look upon it from a place apart! But no; we are immersed in it like the fish in the sea, and we can not even exist beyond its limits. In fact, man can not go anywhere near its upper limits. He must remain forever immersed in it; forever barred from seeing it from the outside.

Thus we remain blind to the wonderful activities of the atmosphere that go on about us constantly, although the effects of many of those processes are seen or felt. We see smoke and dust floating in the air. We see the clouds but can not see the actions of the air in the formation of those clouds. We see the rain, snow, and hail, but can not see the making of the raindrops nor the fashioning of the snowflakes nor the growth of hailstones. Probably a fish does not see the water in which he lives but sees only the larger things that exist in the water. Man only sees some of the things that exist in the atmosphere, not the atmosphere itself.

As a matter of fact, man's sphere is a narrow one when we consider the vastness of the universe or even the immense mass of the earth, of which man claims to be the lord. Under our feet is a body of matter nearly 8,000 miles thick, into which man has penetrated hardly more than a single mile. Overhead is the atmosphere extending upward 100 miles (in a very rarefied state possibly much farther), upward into which man has never gone more than about 6½ miles. Thus, in our vertical movement we are confined to 7½ miles. In our common life we are limited to a zone much narrower even than that—a zone bounded on one side by the surface of the earth and on the other by the plane of the tops of our office buildings, or practically within a space of 300 feet from bottom to top, mostly within less; in fact, by far the greater number of mankind are bound to the surface of the earth—anchored to the bottom of the ocean of air.

## THE ATMOSPHERE AS A WHOLE.

It is worth while to try to get a mental vision of the atmosphere as a whole. Practically the entire layer of atmosphere is confined to a shell extending outward from the earth not more than 200 miles, according to the best evidence we have. Even at a distance of 50 miles above the earth the quantity of air is thought to be almost inappreciable. The density of the atmosphere decreases rapidly as altitude increases. (See Pl. LXXV.) If the atmosphere were of the present sea-level density from bottom to top, it would all be confined within 5 miles of the earth. One-half the mass of the atmosphere is found within 3½ miles of the surface of the earth, three-fourths is below the 7-mile level, and seven-eighths below the 10-mile level.

Thus the solid earth has but a thin coating of air only about one-fortieth as thick as the diameter of the earth at the most; or, if we consider the atmosphere only in its really appreciable extent (about 40 miles above the earth), only one two-hundredth as thick as the diameter of the earth—a mere coating, not thicker, relatively speaking, than the skin on an apple of ordinary size. (See fig. 10.)

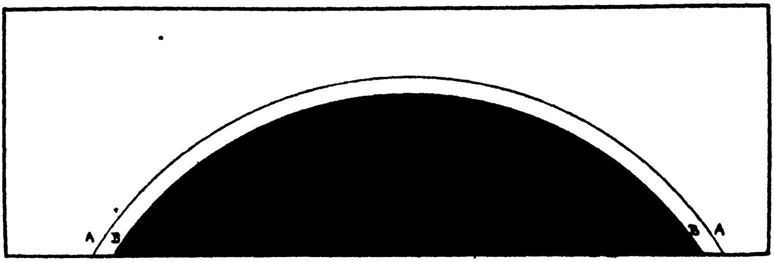


FIG. 10.—Showing the thinness of the atmospheric envelope on the earth. The line *A* represents the extreme limit of the earth's atmosphere above the surface of the earth *B* The assumed limit of the atmosphere is 180 miles and the diameter of the earth is approximately 8,000 miles.

Consider further the fact that storms operate only in that part of the atmosphere lying within about 7 miles of the earth—mainly within 3 miles—and it is truly wonderful what mighty forces are generated and vast energy expended within this thin film of gas. A storm condition may cover one-third the United States, distinctly dominated by forces round about a common center; the disturbance may be 1,000 to 1,500 miles in diameter, while its thickness or upward extent is probably less than 7 miles. In other words, we have tremendous forces at work in a body of air of the relative dimensions of a postal card lying flat upon one's desk. It is in this comparatively thin layer of mere gas that tornadoes form and exert devastating violence in their short and narrow courses, and the great hurricanes of tropical origin form and travel thousands of miles, lasting for a week or more.

Being composed of gases (by percentage of volume, for dry air—nitrogen 78, oxygen 21, argon 0.94, carbon dioxide 0.03, with traces of other gases), the atmosphere is subject to the laws of gases as regards heating, cooling, expansion, and compression, etc. But this vast quantity of atmospheric gas is not quietly confined and subject to the manipulations of man, as gases are handled in a laboratory. It clings to the earth, a body whose surface is composed of land and water most irregularly distributed, and which as a whole rotates rapidly and continually changes its position with relation to the sun, which pours upon it a vast amount of heat that strikes only one-half of the surface of the body at any one time. As a result, the atmosphere as a whole is very irregularly and unevenly warmed and becomes the very symbol of instability. Yet there are certain general laws of the atmosphere that are detected amidst all the apparent confusion, and man has already reduced his atmospheric discoveries to a working basis.

## THE GENERAL CIRCULATION.

The general circulation of the atmosphere might be made the theme of a profoundly interesting story. This vast movement—the exchange of air between the equator and the poles—is due to the fact that the equatorial regions and the polar regions are unequally heated. It has been found that the average difference in temperature between the equator and the poles is about 80 degrees Fahrenheit. The effect of such excess heat at the equator is tremendous. The equatorial region becomes the engine that moves the machinery of the general circulation of the earth's atmosphere.

The lower stratum of air of the tropics expands on being heated and is forced aloft by the cooler and denser air from the neighboring temperate zones, thus establishing a flow toward the equator along the earth's surface, a flow that is maintained by the constant temperature difference. At a great elevation the equatorial air flows off to the north and to the south, finally reaches the polar regions, and there descends and returns toward the equator along the surface of the earth. (The explanation of this flowing of the upper air from equatorial to polar regions and its descent and return can not be given here. In fact, many of the details of this general circulation are not well known.)

Thus are established the great primary movements of the general circulation. These primary movements are much disturbed by the rotation of the earth and by the mixture of land and water, the land being varied in elevation and the ocean currents varied in temperature. Numberless storms continually invade the general system and obscure its workings.

## ATMOSPHERIC DUST.

There is much evidence tending to show that the nucleus of every raindrop is dust. If it is true that the condensation of the moisture of the air is dependent upon dust motes, it can readily be seen how important the dust of the atmosphere is. This story can not be told here, but the conclusions of investigators are that atmospheric dust plays an important part in at least four ways, and these are enumerated by Milham as follows: (1) It is one of the chief causes of haze; (2) it probably serves as centers of condensation for all fog particles and rain drops (it was once thought that condensation was impossible without it); (3) it is the cause of the sunrise and sunset colors and, perhaps, of the blue color of the sky; (4) it is the cause of twilight.

The sources of atmospheric dust are the dust blown up from the surface of the earth by the wind, the dust from volcanoes, the dust from meteors, which are burned and disintegrated in their swift passage through the atmosphere (sometimes at velocities of 40 to 50 miles a second), and the dust from ocean spray. In the case of the volcanic explosion in Krakatoa, between Sumatra and Java, in 1883, dust and steam were thrown into the air to an estimated height of nearly 20 miles, and, according to Milham, "the presence of this dust could be detected in sunset colors all over the world for more than three years."

Dust is carried from place to place by the winds and over great distances. "Indeed, it might almost be said that every square mile of the earth's surface may have received dust from every square mile of dry land" (Salisbury). The atmosphere gives the surface of the earth no rest but is ceaselessly at work upon it, changing its features in many ways.

## MOISTURE IN THE ATMOSPHERE.

It might be said also that the waters of all the oceans have visited every part of the earth, at some time in the history of the globe, so continually and upon such a vast scale are the winds and the forces of evaporation, condensation, and precipitation at work. A continual circulation of water takes place between the hydrosphere (the water areas of the globe) and the atmosphere. The winds blow water vapor from over the seas to the land and ascending currents carry it into the upper atmosphere, where it condenses, is precipitated, and begins the return journey to the seas through springs and rivers. The amount of evaporation from the seas and the amount of precipitation on the land depend upon the temperature and the winds.

It has been estimated that nearly 130 million millions of tons of water are transferred from sea to land and back again to the sea every year. The average annual rainfall of the globe is about 33 inches. In the United States annual averages range from practically no rainfall to about 100 inches. Over the eastern half of the country the annual amounts average from about 30 to about 60 inches; in the Pacific States from 5 to 100 inches. Probably the greatest rainfall in the world occurs among the hills of Assam, in India, where over 500 inches falls in a year. In this region as much as 40 inches has fallen in 24 hours.

## THE WEATHER MAP.

Probably the greatest single outcome of modern meteorology is the daily weather map. It first appeared a little more than a half century ago. It was not possible until telegraphy was invented. Synoptic charts had been constructed, however, as early as 1820, but these were based upon observations taken weeks and months previously, and were made for private study and investigation. Reliable daily forecasts were not then possible. The first weather maps based upon observations transmitted by telegraph were issued during the London World's Fair, in 1851. In the United States the daily weather map began in 1871, this country being the fourth to undertake the work, the Netherlands, England, and France having preceded us.

The Weather Bureau has for many years issued daily weather maps from its stations in the principal cities, whence they are widely distributed in surrounding districts. The information given to the public in these maps is not fully appreciated as generally as it should be, since many have made no study of the construction of the map nor of the laws of storms and weather changes. Yet the rudiments of these things are quickly acquired—a little reading of books on meteorology and a minute or two devoted daily to observation and comparison of maps accomplishes the purpose. Even the reading of books on meteorology could be omitted and still a good working knowledge of the weather maps be attained by a little close attention given daily to the map itself.

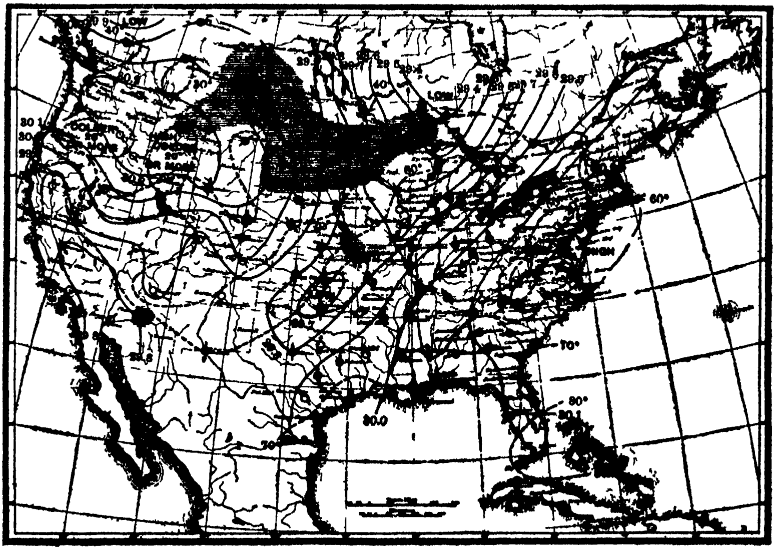


FIG. 11.—Weather map, September 26, 1903, the first of a series of three, showing progress of weather changes across the country The solid lines run through points of equal atmospheric pressure; the broken lines run through points of equal temperature, the circles show state of weather, white for clear, black for cloudy; arrows point in direction wind is blowing; shaded areas show regions of precipitation last 24 hours

As time goes on, however, the weather map is appreciated by a larger and larger percentage of the people, especially the younger people. The schools are taking up the subject, so that many thousands of young folks are learning to read and interpret the maps. The study of the maps furnishes a popular and valuable exercise in courses in physical geography in many schools.

An appreciation of the daily weather map is a matter of so great importance and so much to be desired that it was considered advisable to insert in this article three weather maps, which will illustrate the general laws of weather movements in the United States. (See figs. 11, 12, and 13.)

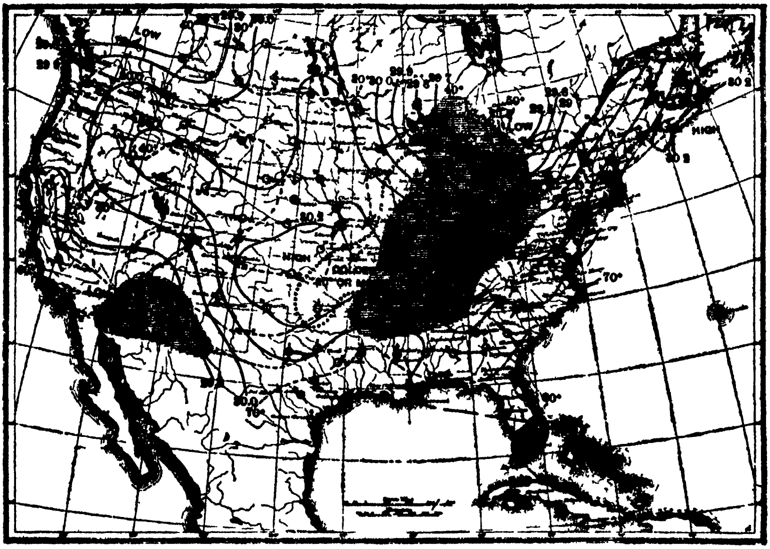


FIG. 12.—Weather map, September 27, 1903, the second of a series of three, showing progress of weather changes across the country The solid lines run through points of equal temperature, the circles show state of weather, white for clear, black for cloudy; arrows point in direction wind is blowing, shaded areas show regions of precipitation last 24 hours.

These weather maps show some essential facts: (1) That weather changes of a general nature proceed from west to east; (2) that regions marked "low" are centers of an atmospheric disturbance, usually attended by cloudiness and rain; (3) that regions marked "high" are centers of fair weather, or the opposite of conditions attending a "low"; (4) that "lows" and "highs" follow in succession; (5) that rising temperatures occur in front of a "low" and falling temperatures in its rear or in connection with the succeeding "high." These are broad generalities. There are many other things to be noticed as one becomes familiar with the maps. As said before, there is an interesting story in the weather map every day.

In examining the three maps reproduced here (figs. 11, 12, and 13), it must be remembered that the "highs" and "lows" over the central and western parts of the country on the first map (fig. 11), appear the second day farther east (fig. 12), and the third day still farther east (fig. 13). They change somewhat in shape, but are the same highs and lows, only farther east. By the third day the ones in advance on the first day have disappeared over the Atlantic Ocean and new ones are appearing in the Far West. Some "highs" and "lows" travel practically around the globe, but most of them disintegrate before journeying so far. This procession of "lows" and "highs" goes on continually, but not in

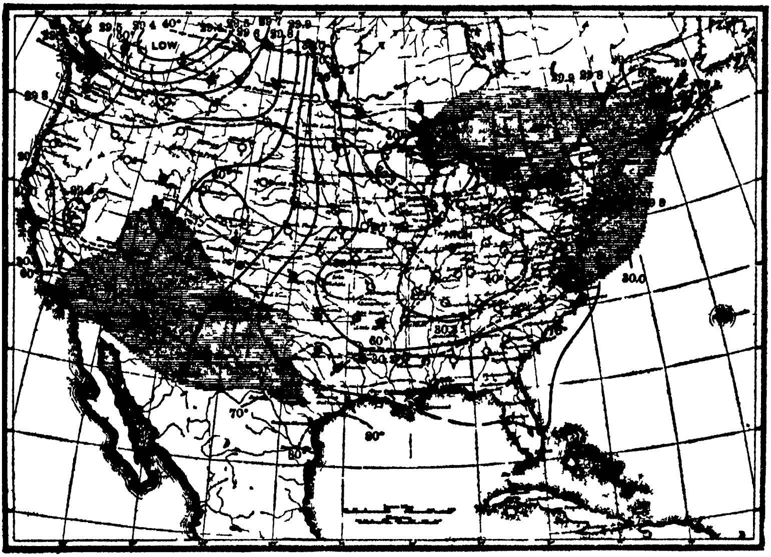


FIG 13.—Weather map, September 28, 1903, the last of a series of three, showing progress of weather changes across the country. The solid lines run through points of equal atmospheric pressure; the broken lines run through points of equal temperature, the circles show state of weather, white for clear, black for cloudy; arrows point in direction wind is blowing; shaded areas show regions of precipitation last 24 hours

exactly the same paths nor with the same velocity and intensity.

### WEATHER CONCERNS EVERYBODY.

Farmers are more intimately concerned with the weather, perhaps, than any other class of people, with the possible exception of sailors. They have an advantage over city people in their opportunities for observation. Naturally they should know much about the weather and climate of their localities, and many observing ones do, but, as a rule, even these are not able to explain many things which they have observed. The usefulness of their own discoveries and the pleasure afforded by the knowledge could be increased in a manifold degree by attention to the weather map and by the reading of fundamental treatises on the subject of the atmosphere in general.

In some degree this is true of all classes of people. There is no one wholly independent of weather conditions; no one without some interest in the weather and who could not add materially to the pleasure of life by enhancing that interest through a little reading on meteorology. Indeed, it seems that there could hardly be made provision for scientific study more fraught with promise of pleasure and profit for coming generations than the establishment of a short course in elementary meteorology in the schools, both city and country. Thus every boy and girl would be given an opportunity to learn more of the air, the home of all life, and to read for themselves its wonderful stories.

# A GRAPHIC SUMMARY OF AMERICAN AGRICULTURE.

(Graphs 1–4; maps 1–78.)

By Middleton Smith, *Bureau of Crop Estimates,* O. E. Baker, *Agriculturist, Office of Farm Management,* and R. G. Hainsworth, *Head Draftsman, Office of Farm Management.*

THE maps and graphs on the following pages, which show the geographic distribution of farms, crops, and live stock in the United States, are based on data contained in reports of the Thirteenth Census or collected by the Bureau of Crop Estimates. The tables have been prepared by the Bureau of Crop Estimates, the maps and description of the agricultural provinces by the Office of Farm Management.

The chief value of a graphic presentation of statistical facts relating to crops and live stock is that it enables the reader to locate at a glance the regions of production without a detailed study of a mass of figures. A table is inserted on each map giving the statistics, by States, for 1909 or 1910, taken from the census, and, where available, also the estimates of the Department of Agriculture for 1915. These tables, in terms of exact figures, assist in interpreting the maps; by comparing the figures for 1909 with those of 1915 an indication is obtained of the changes in acreage, production, or numbers since the last census. At the end of the table, the separate totals for the States to the east and to the west of the Mississippi River are shown.

The map of agricultural provinces (map 1) is based primarily on the geographic distribution of the principal crops and types of farming, which is in turn dependent largely upon climatic conditions. The acreage of land in crops (map 5) includes not only crops for which the census secured acreage reports but also fruits and nuts for which the census reports only the number of trees. The acreage of these fruits has been estimated on the basis of the number of trees per acre by the use of factors for each State supplied by the Office of Horticultural Investigations, Bureau of Plant Industry. The map showing rural population (map 12) represents the population outside of all incorporated places, which differs from the rural population used by the census in that the latter excluded only places of 2,500 inhabitants or more. The statistics for the map "Improved land not in crops" (map 25) were secured by subtracting the acreage of all crops from the acreage of improved land and represent throughout most of the United States approximately the acreage of improved pasture. All of the above maps are based upon unpublished census data compiled by the Office of Farm Management.

The half-page maps of the different vegetables (maps 42 to 51) include only the acreage on farms reporting 1 acre or more of the vegetable specified, and are based upon unpublished county statistics courteously supplied by the Bureau of the Census, as are also the maps of fruit trees not of bearing age. The maps showing the location, 1914, of creameries (map 71) and of cheese factories (map 72) are adapted from maps prepared by the Bureau of Animal Industry. The map showing cotton production, 1914, is based upon the report of the Bureau of the Census. With these exceptions, the maps showing the distribution of the crops are based on statistics collected by the census for the year 1909, and those of farms, farm land, and the classes of live stock represent conditions on April 15, 1910; while the tables also give the estimates of the Department of Agriculture for January 1, 1915.

## THE AGRICULTURAL PROVINCES.

(See map 1.)

The United States may be divided into an eastern and a western half, characterized, broadly speaking, one by a sufficient and the other by an insufficient amount of rainfall for the successful production of crops by ordinary farming methods. The North Pacific coast and several sections in California and in the northern Rocky Mountain region constitute exceptions to this statement. The dividing line which separates the East from the West follows more or less closely the one hundredth meridian, the annual precipitation increasing from 15 inches at the Canadian boundary to about 25 inches at the Mexican line, where the evaporation is much greater. The East is a region of ordinary farming based upon annual summer crops; the West, of grazing, dry farming, winter crops in certain localities, and irrigation, with only limited areas of ordinary farming under humid conditions such as characterizes the East.

The East and the West may each be divided into five agricultural provinces. In the East, precipitation being usually sufficient, the classification is based largely on temperature and the crops grown, while in the West rainfall is the important factor. In the East the agricultural provinces extend for the most part east and west, following parallels of latitude; while in the West the provinces are determined by the mountain ranges and extend north and south. Agriculture in the East varies primarily with latitude and soils, but in the West the principal factors are altitude and rainfall. The average elevation of the eastern half of the United States is less than 1,000 feet; that of the western half, over 4,000 feet.

In the East corn is the dominant crop, constituting over one-third of the acreage and nearly 30 per cent of the value of all crops. It is grown in all the five eastern provinces, but is most important in the corn and winter-wheat belt and in the cotton belt. Along the Gulf of Mexico and the southern Atlantic coast the type of agriculture varies greatly from section to section, so that the region is not named after any crop, but is called the "Southern coast," because the warm water exerts a controlling influence upon climate and crops. There is very little cotton grown outside the cotton belt; scarcely any winter wheat in the eastern half of the United States outside the corn and winter-wheat belt, and virtually no spring wheat outside the spring-wheat province. In the East grass is of greatest importance in the hay and pasture province, where in nearly every county hay and pasture occupy 50 per cent or more of the improved land.

In the West hay is the dominant crop, contributing 44 per cent of the acreage and 30 per cent of the value of all crops in 1909, and the forage obtained by grazing is probably of almost equal value. Alfalfa is the leading hay crop in the Rocky Mountain and arid interior provinces, prairie grasses in the Great Plains province, and grains cut green on the Pacific coast. Wheat contributed 19 per cent of the value of all crops, fruit and nuts 13 per cent, oats 8 per cent, barley 6 per cent, potatoes 4 per cent, and other vegetables 4 per cent in these five western provinces. The value of all crops in the western provinces, however, constituted in 1909 less than 10 per cent of the total for the United States.

The contrast between the East and the West is not as pronounced in live stock as in crops, except that swine are largely confined to the East, while sheep are much more important in the West. There is a marked distinction, however, in the manner of management, the live stock in the East being fed in the barnyards or fields with shelter at night, while in the West the stock is principally grazed on the open range. In the East the hay and pasture province is primarily a dairy region, while the corn and winter-wheat belt is the center of the beef-cattle and swine industry. In the West, the sheep are generally located in the more arid and the cattle in the less arid regions, while in the North Pacific province, with its cool, moist climate, similar to that of the hay and pasture province, dairying is again the dominant live-stock industry.

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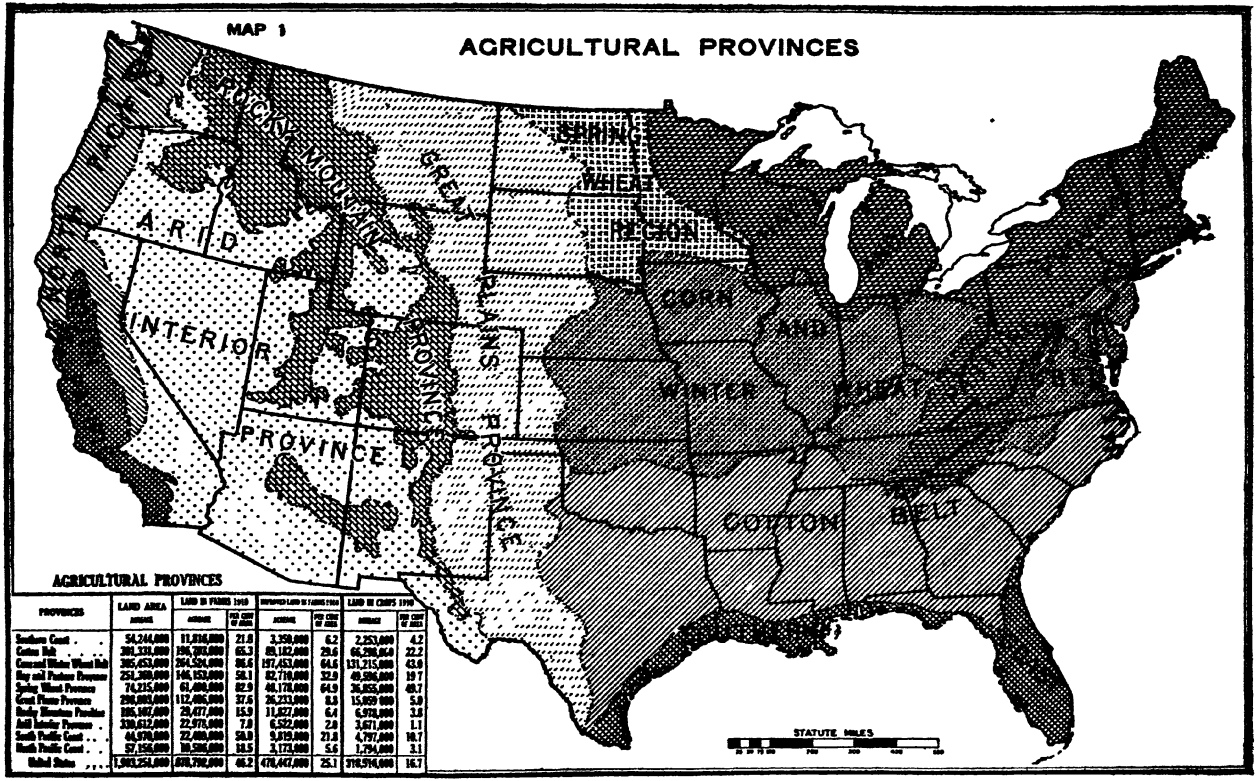
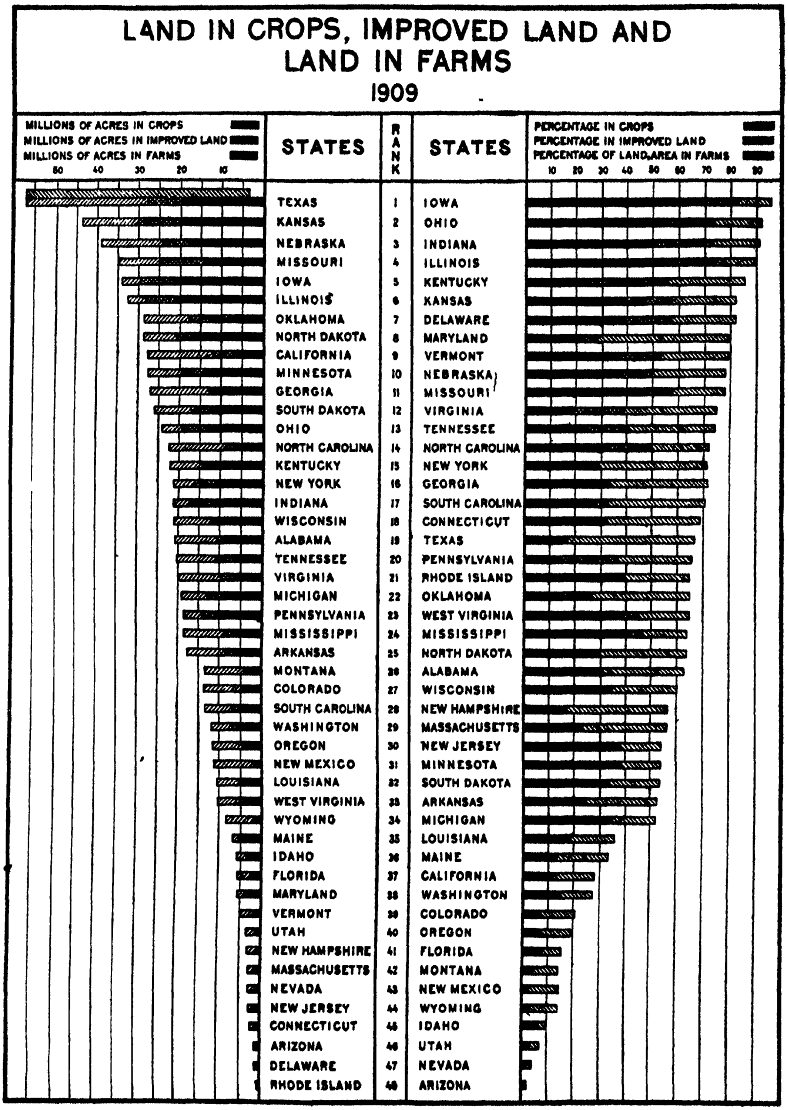


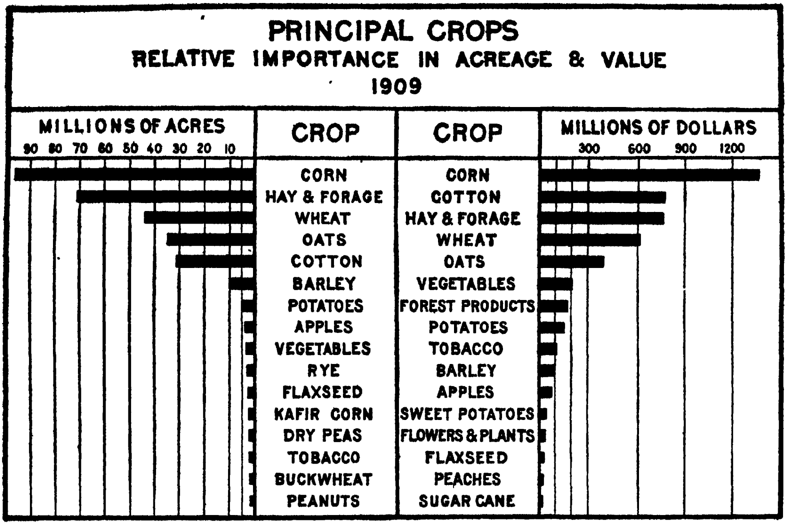
AGRICULTURAL PROVINCES

| PROVINCES | LAND AREA | LAND IN FARMS 1910 | | IMPROVED LAND IN FARMS 1910 | | LAND IN CROPS 1910 | |
|---|---|---|---|---|---|---|---|
| | ACREAGE | ACREAGE | PER CENT OF AREA | ACREAGE | PER CENT OF AREA | ACREAGE | PER CENT OF AREA |
| Southern Coast | 54,244,000 | 11,816,000 | 21.8 | 3,350,000 | 6.2 | 2,253,000 | 4.2 |
| Cotton Belt | 301,331,000 | 196,783,000 | 65.3 | 89,182,000 | 29.6 | 66,298,000 | 22.2 |
| Corn and Winter Wheat Belt | 305,453,000 | 264,524,000 | 86.6 | 197,453,000 | 64.6 | 131,215,000 | 43.0 |
| Hay and Pasture Province | 251,360,000 | 146,153,000 | 58.1 | 82,710,000 | 32.9 | 49,596,000 | 19.7 |
| Spring Wheat Province | 74,215,000 | 61,400,000 | 82.9 | 48,178,000 | 64.9 | 36,055,000 | 48.7 |
| Great Plains Province | 298,883,000 | 112,406,000 | 37.6 | 26,233,000 | 8.8 | 15,059,000 | 5.0 |
| Rocky Mountain Province | 185,107,000 | 29,477,000 | 15.9 | 11,827,000 | 6.4 | 6,978,000 | 3.8 |
| Arid Interior Province | 330,612,000 | 22,978,000 | 7.0 | 6,522,000 | 2.0 | 3,671,000 | 1.1 |
| South Pacific Coast | 44,970,000 | 22,400,000 | 50.0 | 9,819,000 | 21.8 | 4,797,000 | 10.7 |
| North Pacific Coast | 57,156,000 | 10,586,000 | 18.5 | 3,173,000 | 5.6 | 1,794,000 | 3.1 |
| United States | 1,903,251,000 | 878,798,000 | 46.2 | 478,447,000 | 25.1 | 318,514,000 | 16.7 |

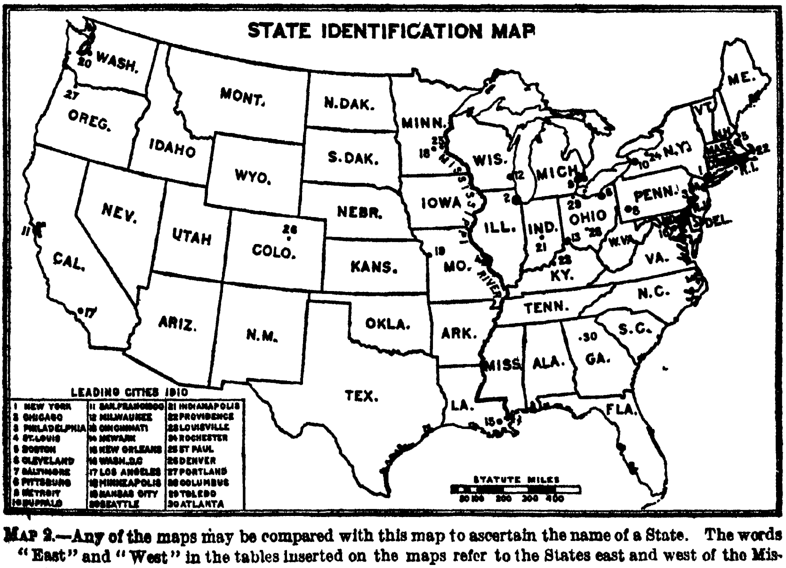
Compare with maps of cotton (map 15), winter wheat (map 17), spring wheat (map 18), and receipts from sale of dairy products (map 70).



GRAPH 1.—The black section of the bar represents the area of the land in crops; the black section plus the cross lined section, the area of improved land; and the entire bar, the area of land in farms.



GRAPH 2.—Compare with maps of corn (map 13), cotton (map 15), wheat (maps 17 and 18), oats (map 21), hay (map 26), etc.



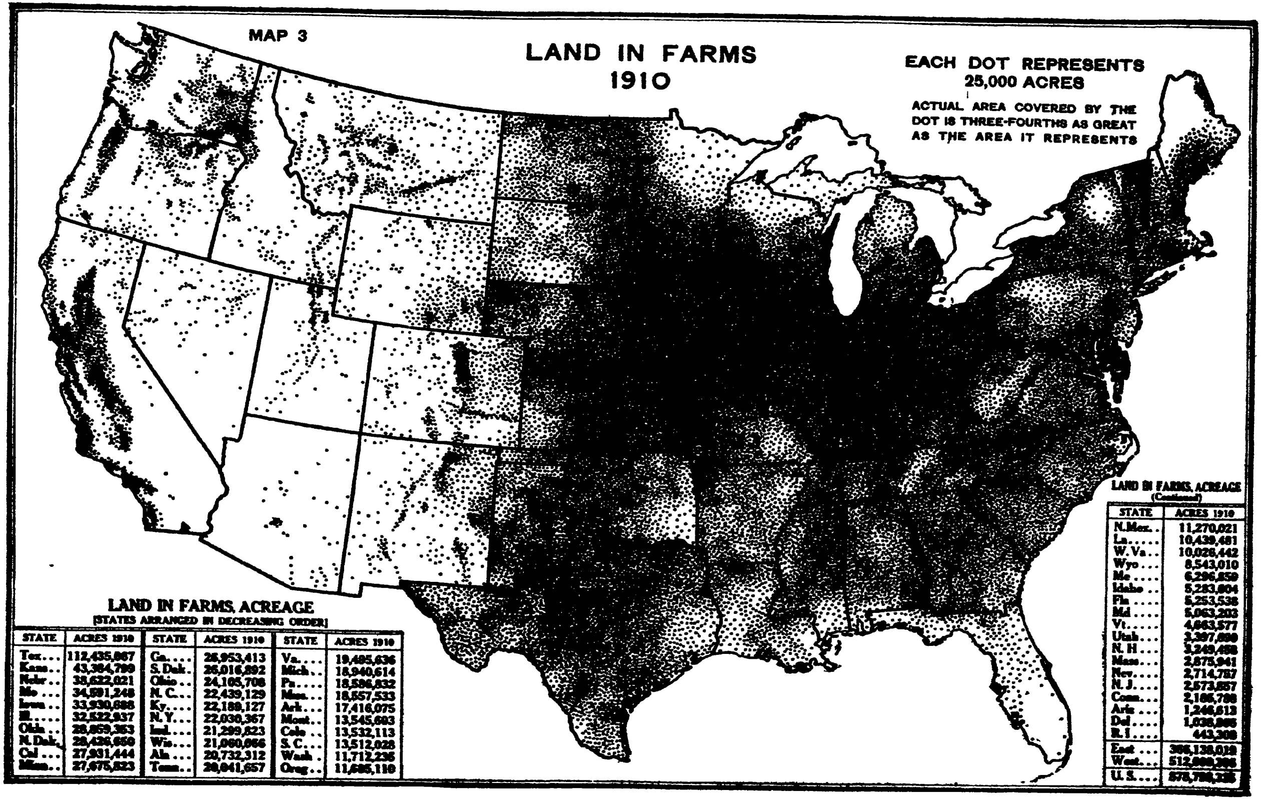
**MAP 2.**—Any of the maps may be compared with this map to ascertain the name of a State. The words "East" and "West" in the tables inserted on the maps refer to the States east and west of the Mississippi River, respectively.

MAP 3

## LAND IN FARMS 1910

EACH DOT REPRESENTS 25,000 ACRES

ACTUAL AREA COVERED BY THE DOT IS THREE-FOURTHS AS GREAT AS THE AREA IT REPRESENTS



### LAND IN FARMS, ACREAGE

[STATES ARRANGED IN DECREASING ORDER]

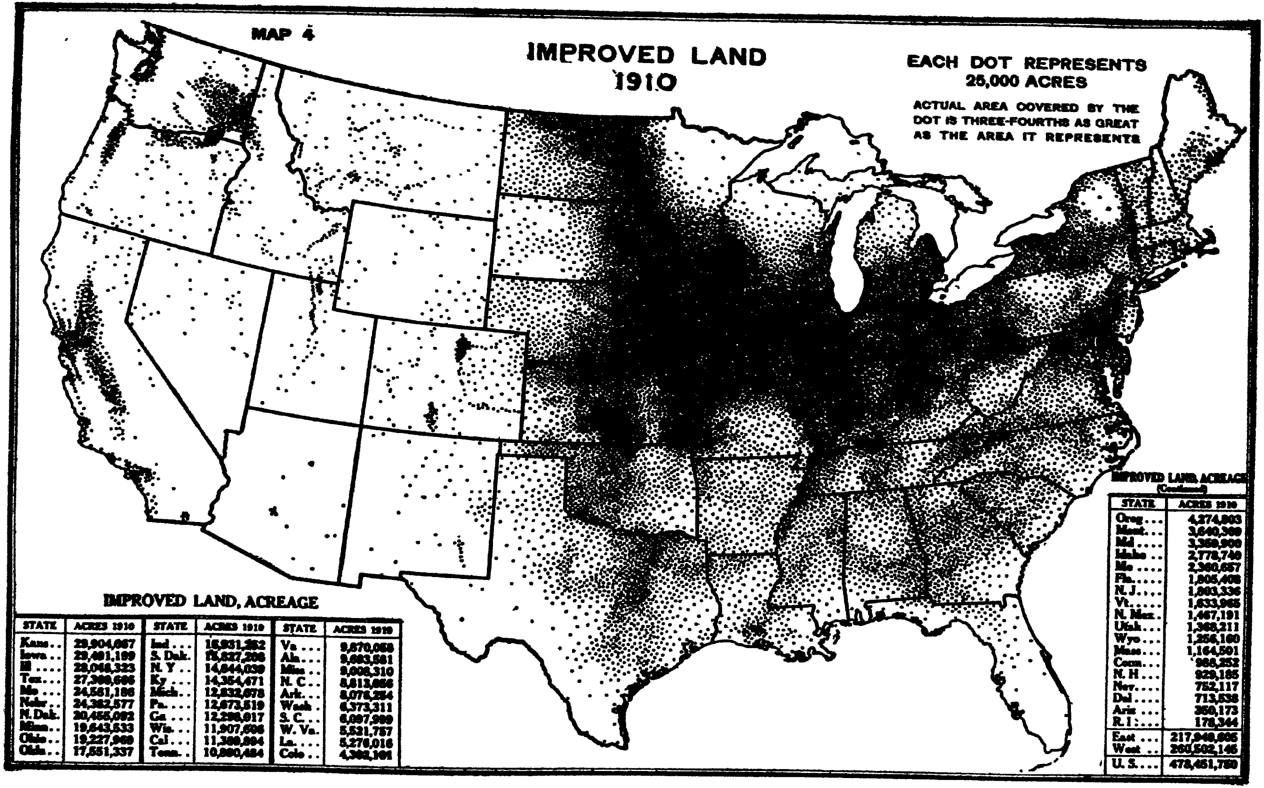
| STATE | ACRES 1910 | STATE | ACRES 1910 | STATE | ACRES 1910 |
|---|---|---|---|---|---|
| Tex. . . | 112,435,067 | Ga. . . . | 26,953,413 | Va. . . . | 19,495,636 |
| Kans. . | 43,384,799 | S. Dak. | 26,016,892 | Mich. . . | 18,940,614 |
| Nebr. . | 38,622,021 | Ohio . . | 24,105,708 | Pa. . . . | 18,586,832 |
| Mo. . . | 34,591,248 | N. C. . . | 22,439,129 | Miss. . . | 18,557,533 |
| Iowa . . | 33,930,688 | Ky. . . . | 22,189,127 | Ark. . . | 17,416,075 |
| Ill. . . . | 32,522,937 | N. Y. . . | 22,030,367 | Mont. . | 13,545,603 |
| Okla. . | 28,859,353 | Ind. . . . | 21,299,823 | Colo. . | 13,532,113 |
| N. Dak. | 28,426,650 | Wis. . . . | 21,060,066 | S. C. . . | 13,512,028 |
| Cal. . . | 27,931,444 | Ala. . . . | 20,732,312 | Wash. . | 11,712,235 |
| Minn. . | 27,675,823 | Tenn. . | 20,041,657 | Oreg. . | 11,685,110 |

### LAND IN FARMS, ACREAGE

(Continued)

| STATE | ACRES 1910 |
|---|---|
| N. Mex. . | 11,270,021 |
| La. . . . . | 10,439,481 |
| W. Va. . | 10,026,442 |
| Wyo. . . | 8,543,010 |
| Me. . . . | 6,296,859 |
| Idaho . . | 5,283,604 |
| Fla. . . . | 5,253,538 |
| Md. . . . | 5,063,203 |
| Vt. . . . . | 4,663,577 |
| Utah . . . | 3,397,699 |
| N. H. . . | 3,249,458 |
| Mass. . . | 2,875,941 |
| Nev. . . . | 2,714,757 |
| N. J. . . . | 2,573,857 |
| Conn. . . | 2,185,788 |
| Ariz. . . | 1,246,613 |
| Del. . . . | 1,038,866 |
| R. I. . . . | 443,308 |
| East . . . | 366,138,019 |
| West. . . | 512,660,306 |
| U. S. . . . | 878,798,325 |

Compare with maps of improved land (map 4) and land in crops (map 5).


MAP 4
IMPROVED LAND
1910
EACH DOT REPRESENTS
25,000 ACRES
ACTUAL AREA COVERED BY THE DOT IS THREE-FOURTHS AS GREAT AS THE AREA IT REPRESENTS

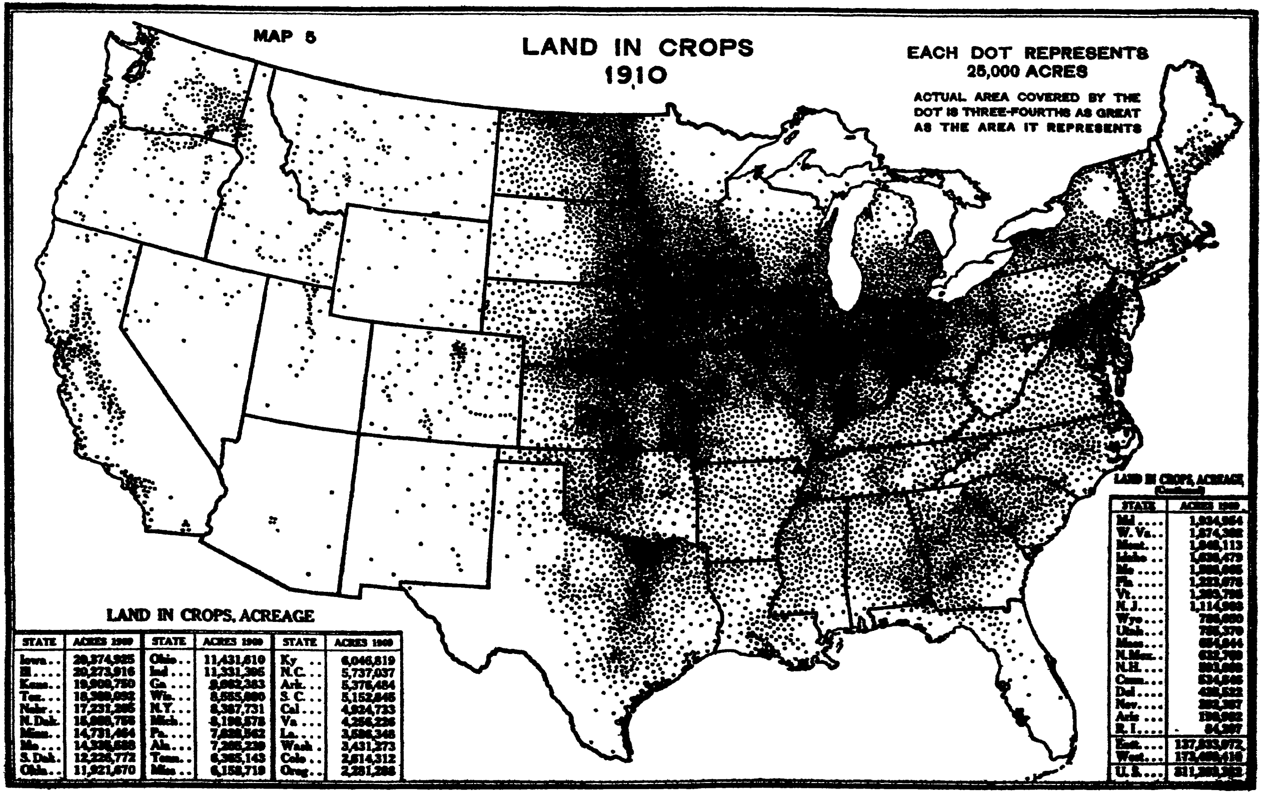
IMPROVED LAND, ACREAGE

| STATE | ACRES 1910 | STATE | ACRES 1910 | STATE | ACRES 1910 |
|---|---|---|---|---|---|
| Kans. . . | 29,904,067 | Ind. . . . | 16,931,252 | Va. . . . | 9,870,058 |
| Iowa . . | 29,491,199 | S. Dak. | 15,827,208 | Ala. . . . | 9,693,581 |
| Ill. . . . . | 28,048,323 | N. Y. . . | 14,844,039 | Miss. . . | 9,008,310 |
| Tex. . . . | 27,360,666 | Ky. . . . | 14,354,471 | N. C. . . | 8,813,056 |
| Mo. . . . | 24,581,186 | Mich. . . | 12,832,078 | Ark. . . . | 8,076,254 |
| Nebr. . . | 24,382,577 | Pa. . . . . | 12,673,519 | Wash. . | 6,373,311 |
| N. Dak. | 20,455,092 | Ga. . . . | 12,298,017 | S. C. . . | 6,097,999 |
| Minn. . . | 19,643,533 | Wis. . . | 11,907,606 | W. Va. | 5,521,757 |
| Ohio . . | 19,227,969 | Cal. . . . | 11,389,894 | La. . . . | 5,276,016 |
| Okla. . . | 17,551,337 | Tenn. . . | 10,890,484 | Colo. . . | 4,302,101 |

IMPROVED LAND, ACREAGE
(Continued)

| STATE | ACRES 1910 |
|---|---|
| Oreg. . . . | 4,274,803 |
| Mont. . . . | 3,640,309 |
| Md. . . . . | 3,358,900 |
| Idaho . . . | 2,778,740 |
| Me. . . . . | 2,360,657 |
| Fla. . . . . | 1,805,408 |
| N. J. . . . . | 1,803,336 |
| Vt. . . . . . | 1,633,965 |
| N. Mex. . | 1,467,191 |
| Utah . . . | 1,368,211 |
| Wyo. . . . | 1,256,160 |
| Mass. . . . | 1,164,501 |
| Conn. . . . | 988,252 |
| N. H. . . . | 929,185 |
| Nev. . . . . | 752,117 |
| Del. . . . . | 713,538 |
| Ariz. . . . | 350,173 |
| R. I. . . . . | 178,344 |
| East . . . | 217,949,605 |
| West . . . | 260,502,145 |
| U. S. . . . | 478,451,750 |

Compare with map of value of farm property (map 9).


MAP 5
LAND IN CROPS
1910
EACH DOT REPRESENTS
25,000 ACRES
ACTUAL AREA COVERED BY THE DOT IS THREE-FOURTHS AS GREAT AS THE AREA IT REPRESENTS

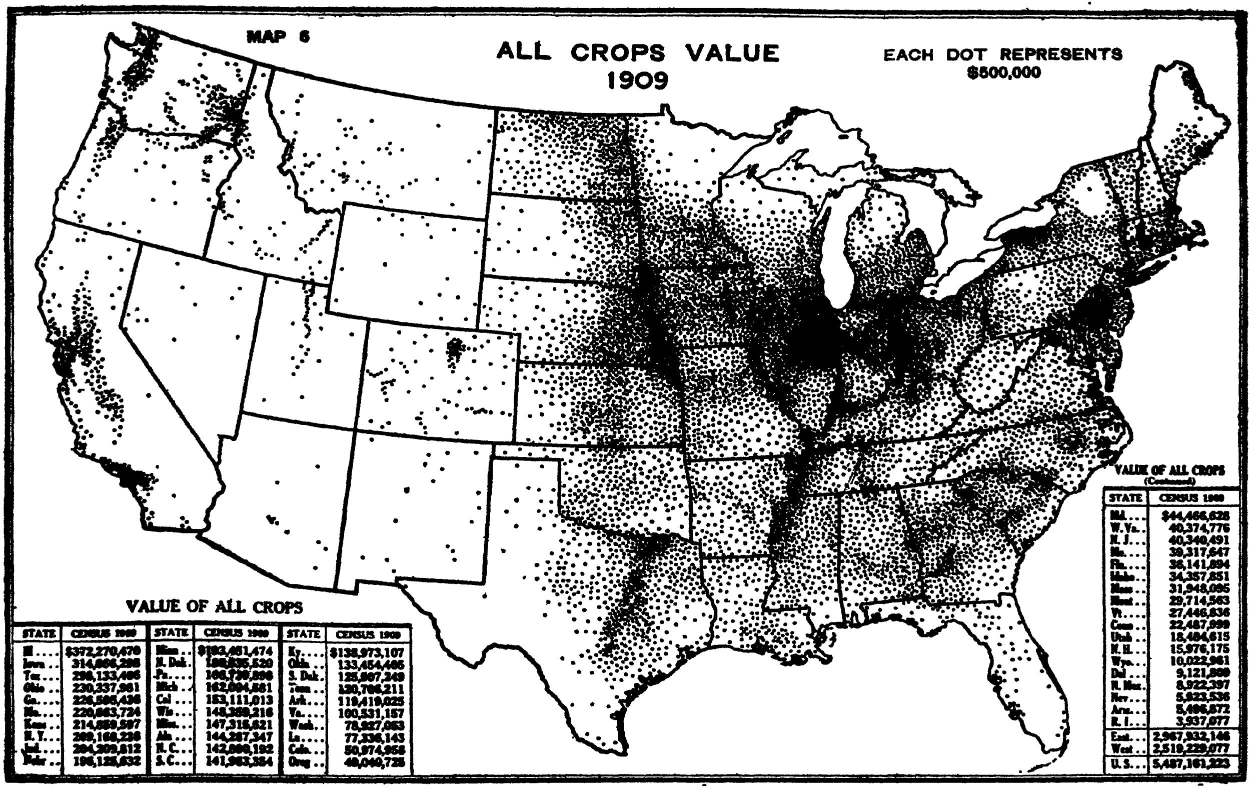
LAND IN CROPS, ACREAGE

| STATE | ACRES 1909 | STATE | ACRES 1909 | STATE | ACRES 1909 |
|---|---|---|---|---|---|
| Iowa | 20,374,925 | Ohio | 11,431,610 | Ky. | 6,046,819 |
| Ill. | 20,273,916 | Ind. | 11,331,395 | N.C. | 5,737,037 |
| Kans. | 19,909,750 | Ga. | 8,962,383 | Ark. | 5,376,484 |
| Tex. | 18,389,052 | Wis. | 8,555,880 | S. C. | 5,152,846 |
| Nebr. | 17,231,285 | N.Y. | 8,387,731 | Cal. | 4,924,733 |
| N. Dak. | 15,888,758 | Mich. | 8,198,578 | Va. | 4,256,226 |
| Minn. | 14,731,464 | Pa. | 7,828,562 | La. | 3,596,348 |
| Mo. | 14,336,688 | Ala. | 7,286,239 | Wash. | 3,431,273 |
| S. Dak. | 12,226,772 | Tenn. | 6,365,143 | Colo. | 2,614,312 |
| Okla. | 11,921,670 | Miss. | 6,158,719 | Oreg. | 2,281,288 |

LAND IN CROPS, ACREAGE (Continued)

| STATE | ACRES 1909 |
|---|---|
| Md. | 1,934,954 |
| W. Va. | 1,874,302 |
| Mont. | 1,848,113 |
| Idaho | 1,830,479 |
| Me. | 1,808,965 |
| Fla. | 1,223,676 |
| Vt. | 1,203,798 |
| N. J. | 1,114,983 |
| Wyo. | 798,950 |
| Utah | 785,379 |
| Mass. | 654,944 |
| N. Mex. | 632,769 |
| N.H. | 593,088 |
| Conn. | 534,846 |
| Del. | 428,532 |
| Nev. | 282,367 |
| Ariz. | 196,982 |
| R. I. | 84,297 |
| East | 137,833,972 |
| West | 173,459,410 |
| U. S. | 311,293,382 |

Compare with map of agricultural provinces (map 1).



VALUE OF ALL CROPS

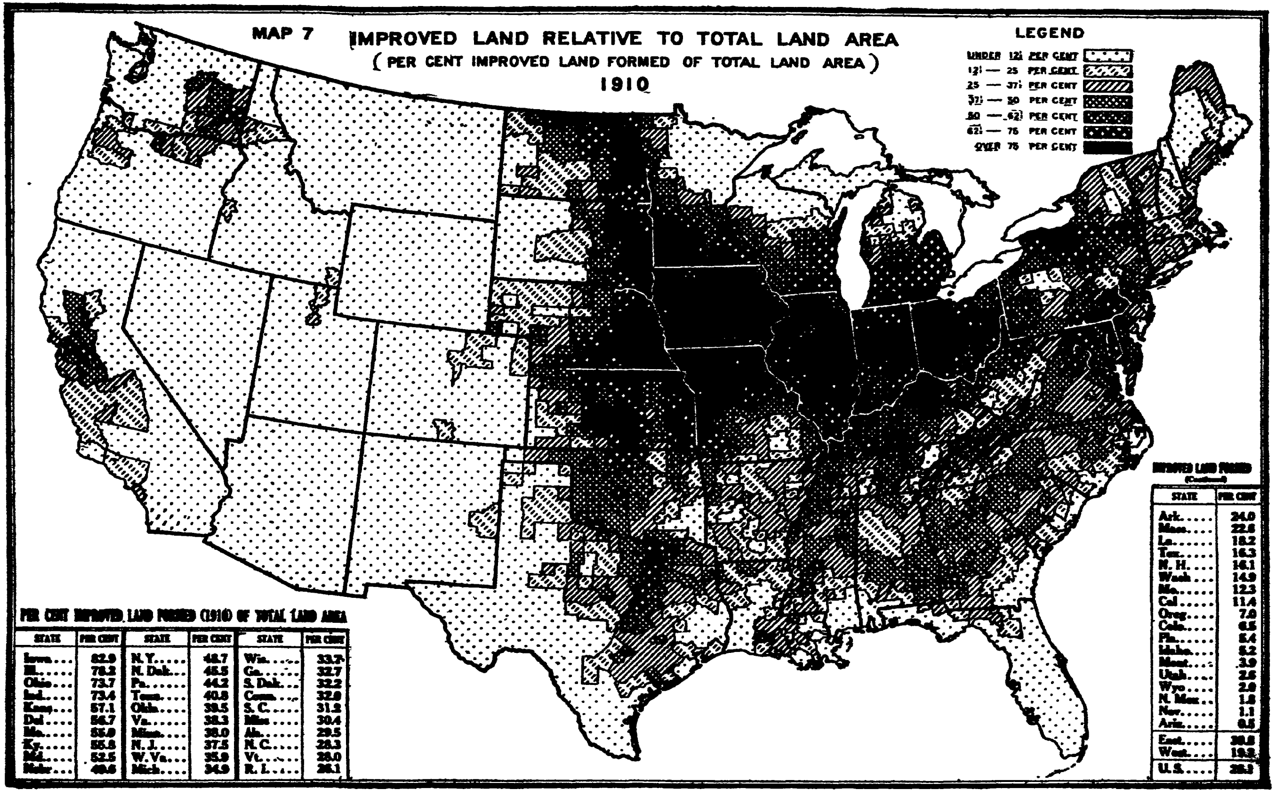
| STATE | CENSUS 1909 | STATE | CENSUS 1909 | STATE | CENSUS 1909 |
|---|---|---|---|---|---|
| Ill. . . . | $372,270,470 | Minn. . . | $193,461,474 | Ky. . . . | $138,973,107 |
| Iowa . . | 314,666,298 | N. Dak. . | 188,535,520 | Okla. . . | 133,454,465 |
| Tex. . . . | 298,133,466 | Pa. . . . | 166,739,896 | S. Dak. . | 125,907,249 |
| Ohio . . | 230,337,981 | Mich. . . | 162,004,581 | Tenn. . . | 120,706,211 |
| Ga. . . . | 226,595,436 | Cal. . . . | 153,111,013 | Ark. . . . | 119,419,025 |
| Mo. . . . | 220,663,724 | Wis. . . . | 148,358,216 | Va. . . . | 100,531,157 |
| Kans. . . | 214,859,597 | Miss. . . | 147,316,621 | Wash. . . | 78,927,053 |
| N. Y. . . | 209,168,236 | Ala. . . . | 144,287,347 | La. . . . | 77,336,143 |
| Ind. . . . | 204,209,812 | N. C. . . | 142,890,192 | Colo. . . | 50,974,958 |
| Nebr. . . | 196,125,632 | S. C. . . | 141,983,384 | Oreg. . . | 40,040,725 |

VALUE OF ALL CROPS
(Continued)

| STATE | CENSUS 1909 |
|---|---|
| Md. . . . | $44,466,628 |
| W. Va. . . | 40,374,776 |
| N. J. . . . | 40,340,491 |
| Me. . . . | 39,317,647 |
| Fla. . . . | 36,141,894 |
| Idaho . . | 34,357,851 |
| Mass. . . | 31,948,095 |
| Mont. . . | 29,714,563 |
| Vt. . . . | 27,446,836 |
| Conn. . . | 22,487,999 |
| Utah . . | 18,484,615 |
| N. H. . . | 15,976,175 |
| Wyo. . . | 10,022,961 |
| Del. . . . | 9,121,809 |
| N. Mex. . | 8,922,397 |
| Nev. . . . | 5,823,536 |
| Ariz. . . | 5,496,872 |
| R. I. . . . | 3,937,077 |
| East. . . | 2,967,932,146 |
| West . . | 2,519,229,077 |
| U. S. . . | 5,487,161,223 |

Compare with map of land in crops (map 5) and value of farm property (map 9).

MAP 7 IMPROVED LAND RELATIVE TO TOTAL LAND AREA
(PER CENT IMPROVED LAND FORMED OF TOTAL LAND AREA)
1910



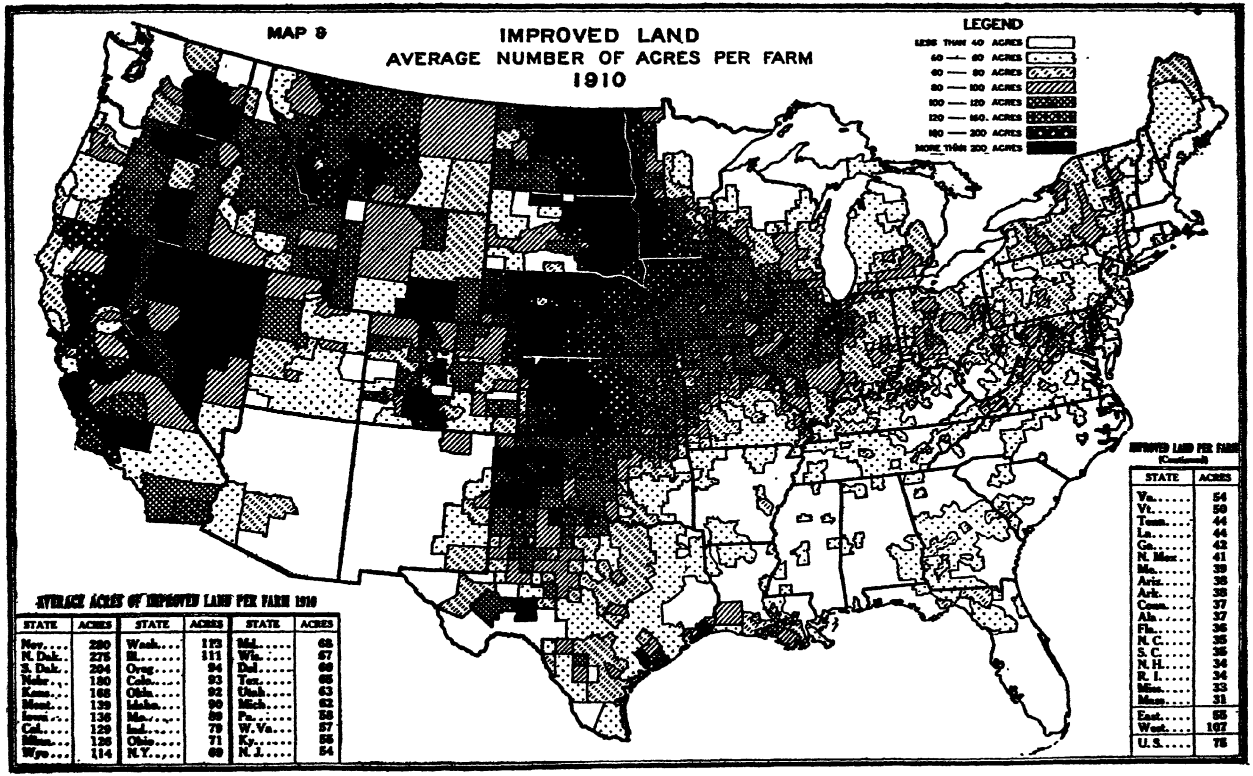
PER CENT IMPROVED LAND FORMED (1910) OF TOTAL LAND AREA

| STATE | PER CENT | STATE | PER CENT | STATE | PER CENT |
|---|---|---|---|---|---|
| Iowa | 82.9 | N. Y. | 48.7 | Wis. | 33.7 |
| Ill. | 78.2 | N. Dak. | 45.5 | Ga. | 32.7 |
| Ohio | 73.7 | Pa. | 44.2 | S. Dak. | 32.2 |
| Ind. | 73.4 | Tenn. | 40.8 | Conn. | 32.0 |
| Kans. | 57.1 | Okla. | 38.5 | S. C. | 31.2 |
| Del. | 56.7 | Va. | 38.3 | Miss. | 30.4 |
| Mo. | 55.9 | Minn. | 38.0 | Ala. | 29.5 |
| Ky. | 55.8 | N. J. | 37.5 | N. C. | 28.3 |
| Md. | 52.5 | W. Va. | 35.9 | Vt. | 28.0 |
| Nebr. | 49.6 | Mich. | 34.9 | R. I. | 26.1 |

IMPROVED LAND FORMED (Continued)

| STATE | PER CENT |
|---|---|
| Ark. | 24.0 |
| Mass. | 22.8 |
| La. | 18.2 |
| Tex. | 16.3 |
| N. H. | 16.1 |
| Wash. | 14.9 |
| Me. | 12.3 |
| Cal. | 11.4 |
| Oreg. | 7.0 |
| Colo. | 6.5 |
| Fla. | 5.4 |
| Idaho | 5.2 |
| Mont. | 3.9 |
| Utah | 2.6 |
| Wyo. | 2.0 |
| N. Mex. | 1.8 |
| Nev. | 1.1 |
| Ariz. | 0.5 |
| East | 38.8 |
| West | 19.2 |
| U. S. | 25.3 |

Compare with map of agricultural provinces (map 1).



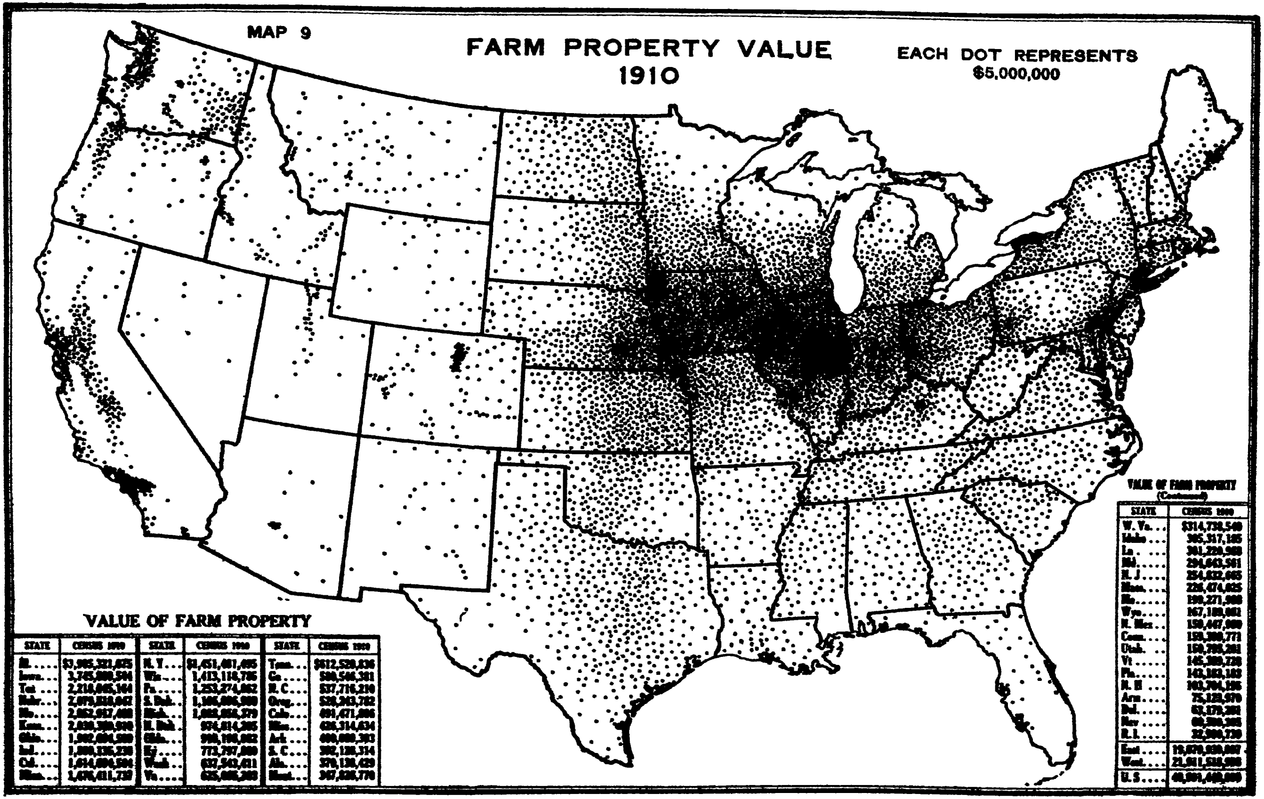
AVERAGE ACRES OF IMPROVED LAND PER FARM 1910

| STATE | ACRES | STATE | ACRES | STATE | ACRES |
|---|---|---|---|---|---|
| Nev. | 280 | Wash. | 113 | Md. | 68 |
| N. Dak. | 275 | Ill. | 111 | Wis. | 67 |
| S. Dak. | 204 | Oreg. | 94 | Del. | 66 |
| Nebr. | 180 | Colo. | 93 | Tex. | 65 |
| Kans. | 168 | Okla. | 92 | Utah | 63 |
| Mont. | 139 | Idaho | 90 | Mich. | 62 |
| Iowa | 136 | Mo. | 89 | Pa. | 58 |
| Cal. | 129 | Ind. | 79 | W. Va. | 57 |
| Minn. | 126 | Ohio | 71 | Ky. | 56 |
| Wyo. | 114 | N.Y. | 69 | N. J. | 54 |

IMPROVED LAND PER FARM (Continued)

| STATE | ACRES |
|---|---|
| Va. | 54 |
| Vt. | 50 |
| Tenn. | 44 |
| La. | 44 |
| Ga. | 42 |
| N. Mex. | 41 |
| Me. | 39 |
| Ariz. | 38 |
| Ark. | 38 |
| Conn. | 37 |
| Ala. | 37 |
| Fla. | 36 |
| N. C. | 35 |
| S. C. | 35 |
| N. H. | 34 |
| R. I. | 34 |
| Miss. | 33 |
| Mass. | 31 |
| East | 55 |
| West | 107 |
| U.S. | 75 |

Compare with maps of spring wheat (map 18), winter wheat (map 17), hay and forage (map 26), corn (map 13), and cotton (map 15).



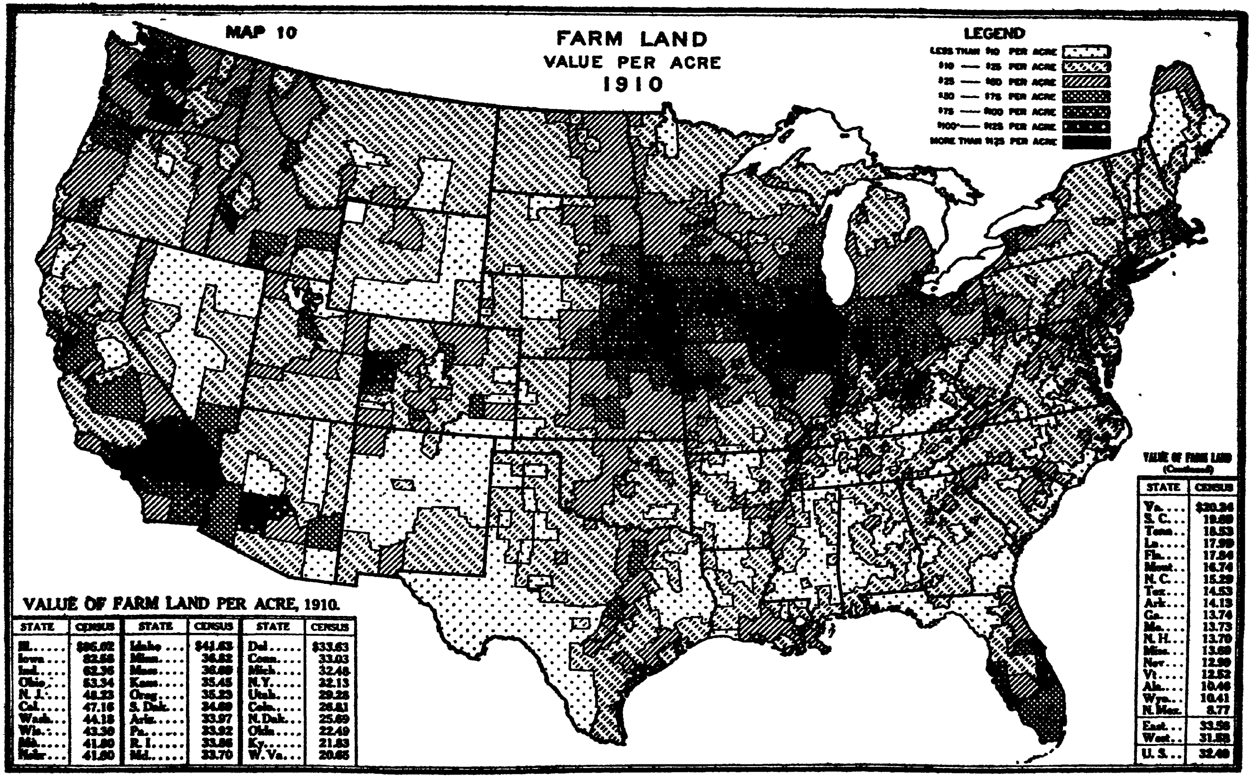
VALUE OF FARM PROPERTY

| STATE | CENSUS 1910 | STATE | CENSUS 1910 | STATE | CENSUS 1910 |
|---|---|---|---|---|---|
| Ill. . . . . | $3,905,321,075 | N. Y. . . . | $1,451,481,495 | Tenn. . . | $612,520,836 |
| Iowa. . . | 3,745,860,544 | Wis. . . . | 1,413,118,785 | Ga. . . . . | 580,546,381 |
| Tex. . . . | 2,218,645,164 | Pa. . . . . | 1,253,274,862 | N. C. . . . | 537,716,210 |
| Nebr. . . | 2,079,818,647 | S. Dak. . | 1,166,096,980 | Oreg. . . | 528,243,782 |
| Mo. . . . . | 2,052,917,488 | Mich. . . | 1,088,858,379 | Colo. . . | 491,471,806 |
| Kans. . . | 2,039,389,910 | N. Dak. . | 974,814,205 | Miss. . . | 426,314,634 |
| Ohio. . . | 1,902,694,589 | Okla. . . | 918,198,882 | Ark. . . . | 400,088,303 |
| Ind. . . . | 1,809,135,238 | Ky. . . . . | 773,797,880 | S. C. . . . | 392,128,314 |
| Cal. . . . | 1,614,694,584 | Wash. . . | 637,543,411 | Ala. . . . | 370,138,429 |
| Minn. . . | 1,476,411,737 | Va. . . . . | 625,065,383 | Mont. . . | 347,828,770 |

VALUE OF FARM PROPERTY
(Continued)

| STATE | CENSUS 1910 |
|---|---|
| W. Va. . . | $314,738,540 |
| Idaho . . . | 305,317,185 |
| La. . . . . | 301,220,988 |
| Md. . . . . | 294,643,591 |
| N. J. . . . | 254,832,665 |
| Mass. . . . | 226,474,025 |
| Me. . . . . | 199,271,998 |
| Wyo. . . . | 167,189,081 |
| N. Mex. . | 159,447,990 |
| Conn. . . . | 159,399,771 |
| Utah. . . | 150,795,201 |
| Vt . . . . . | 145,399,728 |
| Fla. . . . . | 143,183,183 |
| N. H . . . | 103,704,196 |
| Ariz. . . . | 75,123,970 |
| Del. . . . . | 63,179,201 |
| Nev . . . . | 60,399,365 |
| R. I. . . . . | 32,990,739 |
| East . . . . | 19,079,930,094 |
| West. . . . | 21,911,518,996 |
| U. S. . . . | 40,991,449,090 |

Compare with map of value of farm land per acre (map 10).



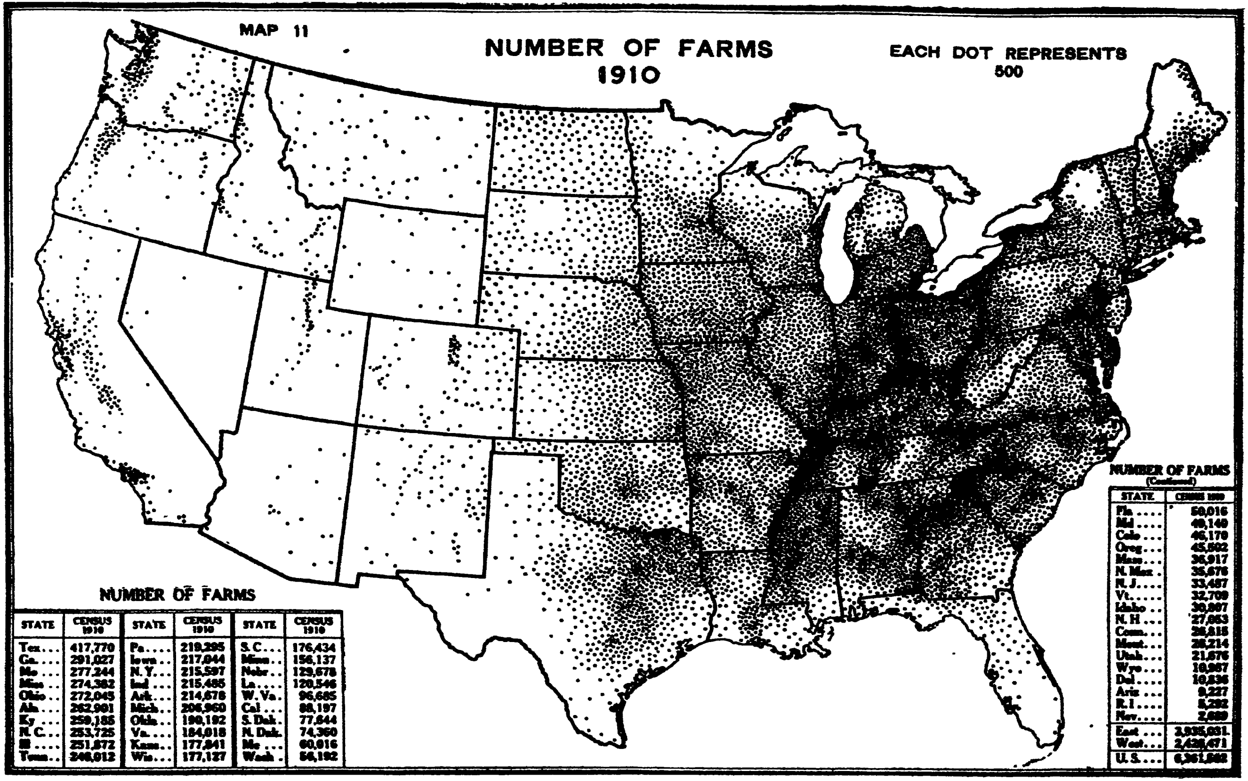
VALUE OF FARM LAND PER ACRE, 1910.

| STATE | CENSUS | STATE | CENSUS | STATE | CENSUS |
|---|---|---|---|---|---|
| Ill. | $95.02 | Idaho | $41.63 | Del. | $33.63 |
| Iowa | 82.58 | Minn. | 36.82 | Conn. | 33.03 |
| Ind. | 62.36 | Mass. | 36.88 | Mich. | 32.48 |
| Ohio | 53.34 | Kans. | 35.45 | N.Y. | 32.13 |
| N. J. | 48.23 | Oreg. | 35.23 | Utah | 29.28 |
| Cal. | 47.16 | S. Dak. | 34.69 | Colo. | 26.81 |
| Wash. | 44.18 | Ariz. | 33.97 | N. Dak. | 25.69 |
| Wis. | 43.30 | Pa. | 33.92 | Okla. | 22.49 |
| Mo. | 41.80 | R. I. | 33.86 | Ky. | 21.83 |
| Nebr. | 41.80 | Md. | 33.70 | W. Va. | 20.65 |

VALUE OF FARM LAND (Continued)

| STATE | CENSUS |
|---|---|
| Va. | $20.24 |
| S. C. | 19.89 |
| Tenn. | 18.53 |
| La. | 17.99 |
| Fla. | 17.84 |
| Mont. | 16.74 |
| N. C. | 15.29 |
| Tex. | 14.53 |
| Ark. | 14.13 |
| Ga. | 13.74 |
| Me. | 13.73 |
| N. H. | 13.70 |
| Miss. | 13.69 |
| Nev. | 12.99 |
| Vt. | 12.52 |
| Ala. | 10.46 |
| Wyo. | 10.41 |
| N. Mex. | 8.77 |
| East | 33.56 |
| West | 31.83 |
| U. S. | 32.40 |

Compare with maps of agricultural provinces (map 1), corn (map 13), cotton (map 15), and fruits and nuts (map 52).



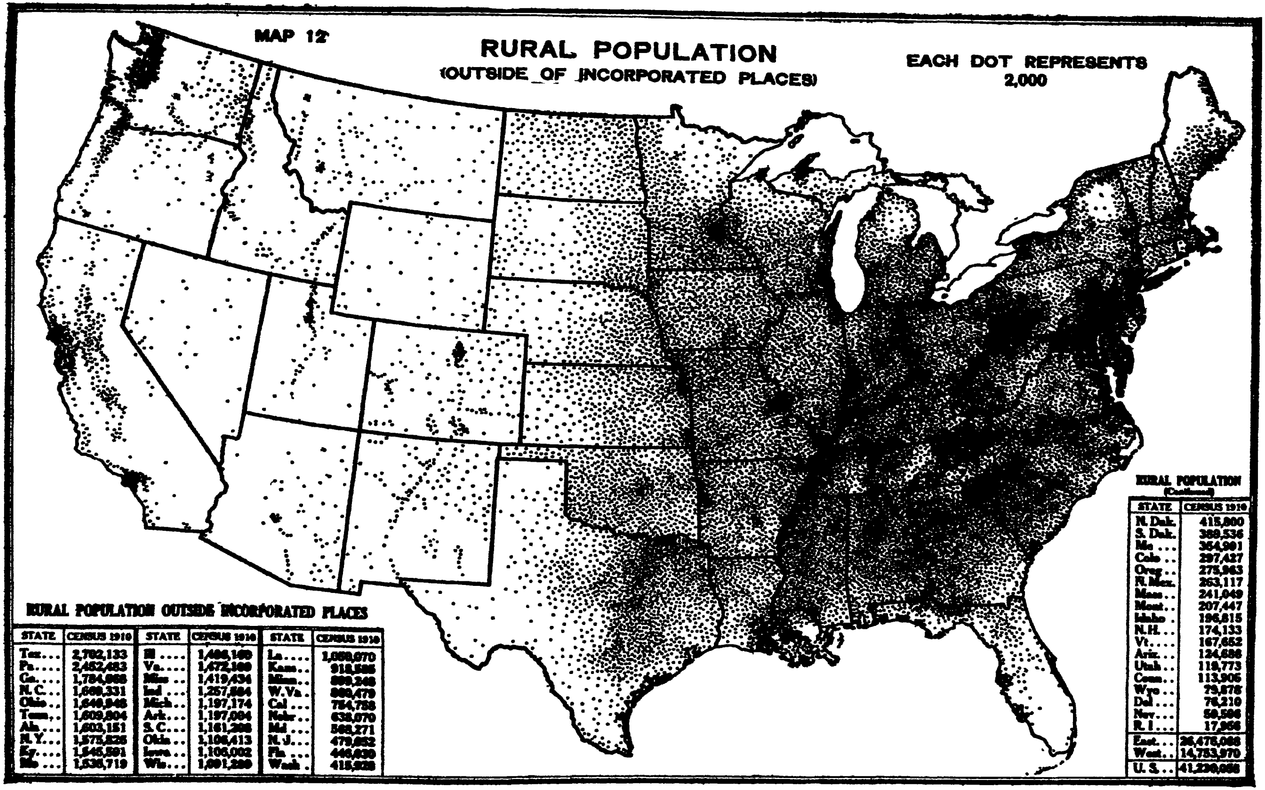
NUMBER OF FARMS

| STATE | CENSUS 1910 | STATE | CENSUS 1910 | STATE | CENSUS 1910 |
|---|---|---|---|---|---|
| Tex. . . . | 417,770 | Pa. . . . . | 219,295 | S. C. . . . | 176,434 |
| Ga. . . . | 291,027 | Iowa . . . | 217,044 | Minn. . . | 156,137 |
| Mo . . . . | 277,244 | N. Y. . . . | 215,597 | Nebr . . . | 129,678 |
| Miss . . . | 274,382 | Ind . . . . | 215,485 | La. . . . . | 120,546 |
| Ohio . . . | 272,045 | Ark. . . . | 214,678 | W. Va. . | 96,685 |
| Ala. . . . | 262,901 | Mich. . . | 206,960 | Cal . . . . | 88,197 |
| Ky . . . . | 259,185 | Okla. . . | 190,192 | S. Dak. . | 77,644 |
| N. C. . . . | 253,725 | Va. . . . . | 184,018 | N. Dak. | 74,360 |
| Ill . . . . . | 251,872 | Kans. . . | 177,841 | Me . . . . | 60,016 |
| Tenn. . . | 246,012 | Wis. . . . | 177,127 | Wash . . | 56,192 |

NUMBER OF FARMS
(Continued)

| STATE | CENSUS 1910 |
|---|---|
| Fla. . . . . | 50,016 |
| Md . . . . . | 48,140 |
| Colo . . . . | 46,170 |
| Oreg. . . . | 45,502 |
| Mass. . . . | 36,917 |
| N. Mex . . | 35,676 |
| N. J. . . . . | 33,487 |
| Vt. . . . . . | 32,709 |
| Idaho . . . | 30,807 |
| N. H . . . . | 27,053 |
| Conn. . . . | 26,815 |
| Mont. . . . | 26,214 |
| Utah. . . . | 21,676 |
| Wyo . . . . | 10,987 |
| Del . . . . . | 10,836 |
| Ariz . . . . | 9,227 |
| R. I. . . . . | 5,292 |
| Nev. . . . . | 2,689 |
| East . . . . | 3,935,031 |
| West. . . . | 2,426,471 |
| U. S. . . . . | 6,361,502 |

Compare with maps of rural population outside incorporated places (map 12), acres of improved land per farm (map 8), and land in crops (map 5).



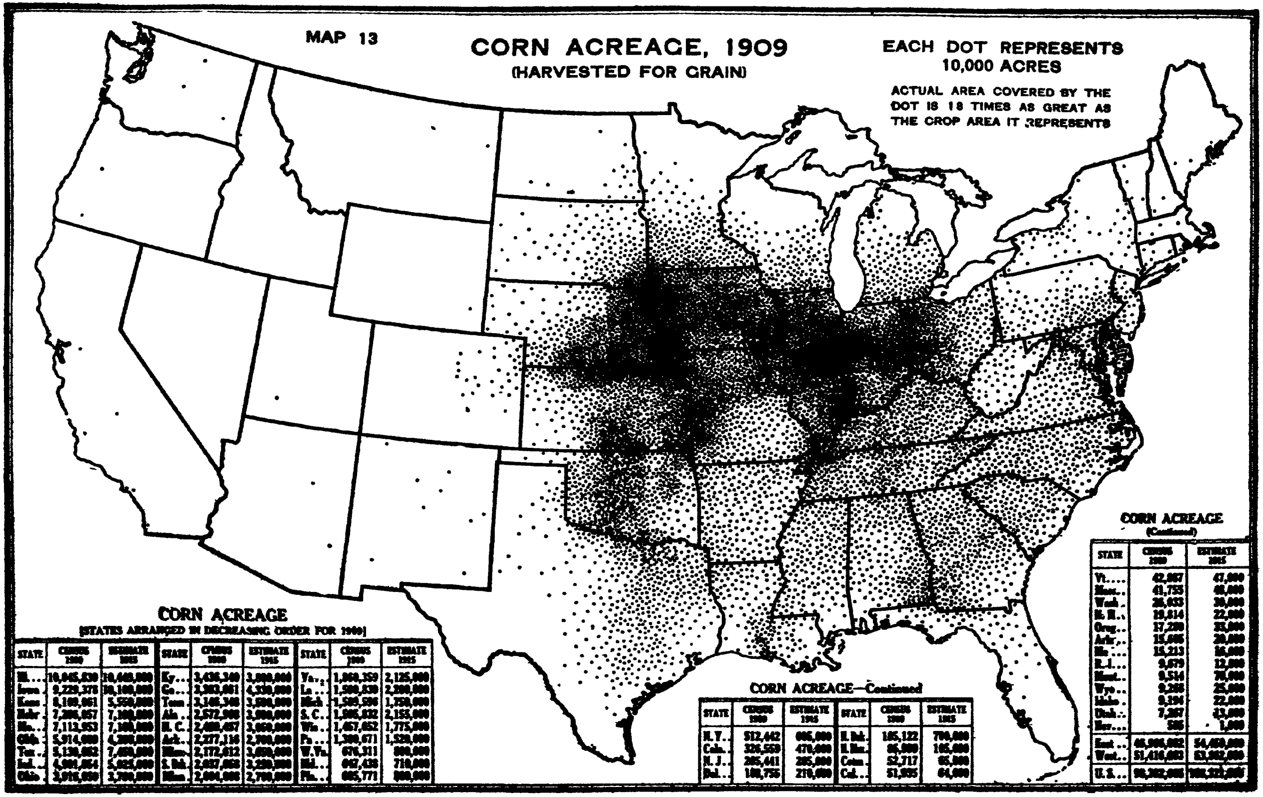
RURAL POPULATION OUTSIDE INCORPORATED PLACES

| STATE | CENSUS 1910 | STATE | CENSUS 1910 | STATE | CENSUS 1910 |
|---|---|---|---|---|---|
| Tex.... | 2,782,133 | Ill.... | 1,486,180 | La.... | 1,059,070 |
| Pa.... | 2,452,483 | Va.... | 1,472,180 | Kans.. | 918,586 |
| Ga.... | 1,784,968 | Miss... | 1,419,434 | Minn.. | 898,248 |
| N.C... | 1,668,331 | Ind.... | 1,257,864 | W.Va.. | 880,479 |
| Ohio.. | 1,640,948 | Mich... | 1,197,174 | Cal.... | 754,758 |
| Tenn.. | 1,609,804 | Ark.... | 1,197,094 | Nebr.. | 638,070 |
| Ala... | 1,603,151 | S.C.... | 1,161,298 | Md.... | 568,271 |
| N.Y... | 1,575,826 | Okla... | 1,106,413 | N.J.... | 479,652 |
| Ky.... | 1,545,591 | Iowa... | 1,106,002 | Fla.... | 446,830 |
| Mo.... | 1,536,719 | Wis.... | 1,091,280 | Wash.. | 415,928 |

RURAL POPULATION
(Continued)

| STATE | CENSUS 1910 |
|---|---|
| N. Dak. | 415,800 |
| S. Dak. | 389,536 |
| Me.... | 364,901 |
| Colo... | 297,427 |
| Oreg... | 275,963 |
| N. Mex. | 263,117 |
| Mass... | 241,049 |
| Mont... | 207,447 |
| Idaho.. | 196,815 |
| N.H.... | 174,133 |
| Vt..... | 167,652 |
| Ariz.... | 124,686 |
| Utah... | 119,773 |
| Conn... | 113,905 |
| Wyo... | 79,878 |
| Del.... | 76,210 |
| Nev.... | 58,586 |
| R.I.... | 17,966 |
| East... | 26,476,088 |
| West... | 14,753,970 |
| U.S.... | 41,230,058 |

Compare with map of value of farm property (map 9).



MAP 13

CORN ACREAGE, 1909
(HARVESTED FOR GRAIN)

EACH DOT REPRESENTS 10,000 ACRES

ACTUAL AREA COVERED BY THE DOT IS 18 TIMES AS GREAT AS THE CROP AREA IT REPRESENTS

CORN ACREAGE
[STATES ARRANGED IN DECREASING ORDER FOR 1909]

| STATE | CENSUS 1909 | ESTIMATE 1915 | STATE | CENSUS 1909 | ESTIMATE 1915 | STATE | CENSUS 1909 | ESTIMATE 1915 |
|---|---|---|---|---|---|---|---|---|
| Ill. . . | 10,045,839 | 10,440,000 | Ky. . . | 3,436,340 | 3,800,000 | Va. . . | 1,869,359 | 2,125,000 |
| Iowa . | 9,229,378 | 10,100,000 | Ga. . . | 3,383,061 | 4,330,000 | La. . . | 1,500,830 | 2,200,000 |
| Kans . | 8,109,061 | 5,550,000 | Tenn . | 3,146,348 | 3,500,000 | Mich . | 1,585,586 | 1,750,000 |
| Nebr . | 7,296,057 | 7,100,000 | Ala. . | 2,572,908 | 3,000,000 | S. C. . | 1,565,032 | 2,155,000 |
| Mo. . . | 7,113,953 | 7,100,000 | N. C. . | 2,400,457 | 3,050,000 | Wis . . | 1,457,052 | 1,775,000 |
| Okla. . | 5,914,000 | 4,200,000 | Ark. . | 2,277,116 | 2,700,000 | Pa. . . | 1,390,671 | 1,520,000 |
| Tex . . | 5,130,082 | 7,450,000 | Miss. . | 2,172,012 | 3,050,000 | W. Va. | 676,311 | 800,000 |
| Ind. . . | 4,901,054 | 5,025,000 | S. Dak. | 2,037,058 | 3,250,000 | Md. . . | 647,426 | 710,000 |
| Ohio . | 3,916,050 | 3,700,000 | Minn. . | 2,004,996 | 2,700,000 | Fla. . . | 605,771 | 800,000 |

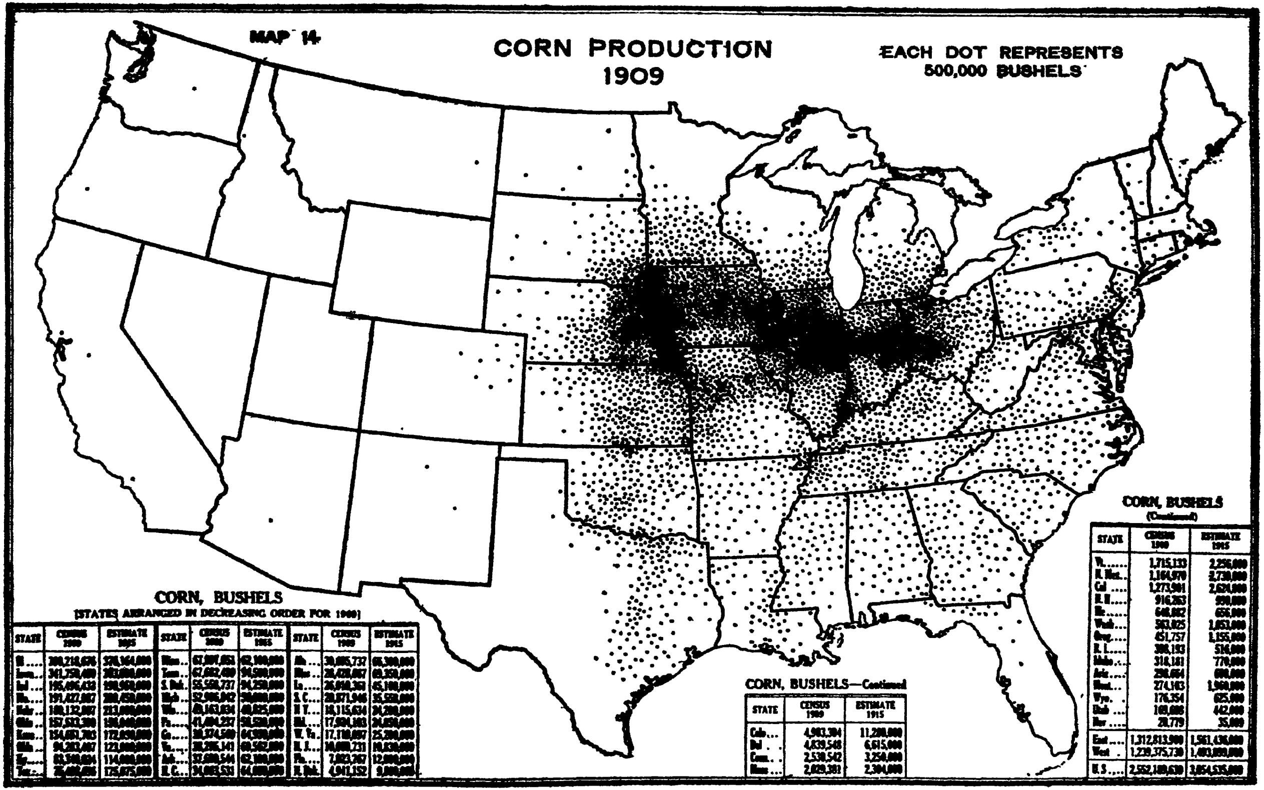
CORN ACREAGE—Continued

| STATE | CENSUS 1909 | ESTIMATE 1915 | STATE | CENSUS 1909 | ESTIMATE 1915 |
|---|---|---|---|---|---|
| N. Y. . | 512,442 | 665,000 | N. Dak. | 165,122 | 700,000 |
| Colo. . | 326,559 | 470,000 | N. Mex. | 95,999 | 105,000 |
| N. J. . | 265,441 | 285,000 | Conn . | 52,717 | 65,000 |
| Del. . . | 186,755 | 210,000 | Cal. . . | 51,935 | 64,000 |

CORN ACREAGE
(Continued)

| STATE | CENSUS 1909 | ESTIMATE 1915 |
|---|---|---|
| Vt. . . . | 42,007 | 47,000 |
| Mass. . | 41,755 | 46,000 |
| Wash . | 26,033 | 36,000 |
| N. H. . | 19,814 | 22,000 |
| Oreg. . | 17,290 | 33,000 |
| Ariz. . | 15,605 | 20,000 |
| Me . . . | 15,213 | 16,000 |
| R. I. . . | 9,679 | 12,000 |
| Mont. . | 9,514 | 70,000 |
| Wyo . . | 9,268 | 25,000 |
| Idaho . | 9,194 | 22,000 |
| Utah . . | 7,267 | 13,000 |
| Nev . . . | 585 | 1,000 |
| East . . | 46,966,662 | 54,459,000 |
| West . . | 51,416,003 | 53,862,000 |
| U. S. . . | 98,382,665 | 108,321,000 |

Compare with maps of swine (map 73), steers and bulls (map 68), and Kafir corn (map 37).



CORN PRODUCTION 1909

CORN, BUSHELS

[STATES ARRANGED IN DECREASING ORDER FOR 1909]

| STATE | CENSUS 1909 | ESTIMATE 1915 | STATE | CENSUS 1909 | ESTIMATE 1915 | STATE | CENSUS 1909 | ESTIMATE 1915 |
|---|---|---|---|---|---|---|---|---|
| Ill.... | 390,218,676 | 378,164,000 | Minn... | 67,897,051 | 82,100,000 | Ala.... | 30,665,737 | 65,300,000 |
| Iowa... | 341,750,460 | 303,000,000 | Tenn... | 67,682,489 | 94,500,000 | Miss... | 28,428,087 | 69,350,000 |
| Ind.... | 195,496,433 | 198,950,000 | S. Dak. | 55,558,737 | 94,250,000 | La..... | 26,858,363 | 45,100,000 |
| Mo.... | 191,427,087 | 200,450,000 | Mich... | 52,906,842 | 50,000,000 | S. C.... | 20,871,946 | 35,550,000 |
| Nebr... | 180,132,807 | 213,000,000 | Wis.... | 49,163,834 | 49,025,000 | N. Y.... | 18,115,634 | 24,200,000 |
| Ohio... | 157,523,300 | 150,040,000 | Pa..... | 41,404,237 | 58,520,000 | Md..... | 17,904,103 | 24,050,000 |
| Kans... | 154,651,703 | 172,850,000 | Ga..... | 38,374,500 | 64,500,000 | W. Va.. | 17,110,057 | 25,200,000 |
| Okla... | 94,283,407 | 123,000,000 | Va..... | 38,206,141 | 60,562,000 | N. J.... | 10,809,731 | 10,830,000 |
| Ky..... | 83,350,834 | 114,000,000 | Ark.... | 32,609,544 | 62,100,000 | Fla.... | 7,023,287 | 12,000,000 |
| Tex.... | 75,408,856 | 175,075,000 | N. C... | 34,063,531 | 64,000,000 | N. Dak. | 4,941,152 | 9,000,000 |

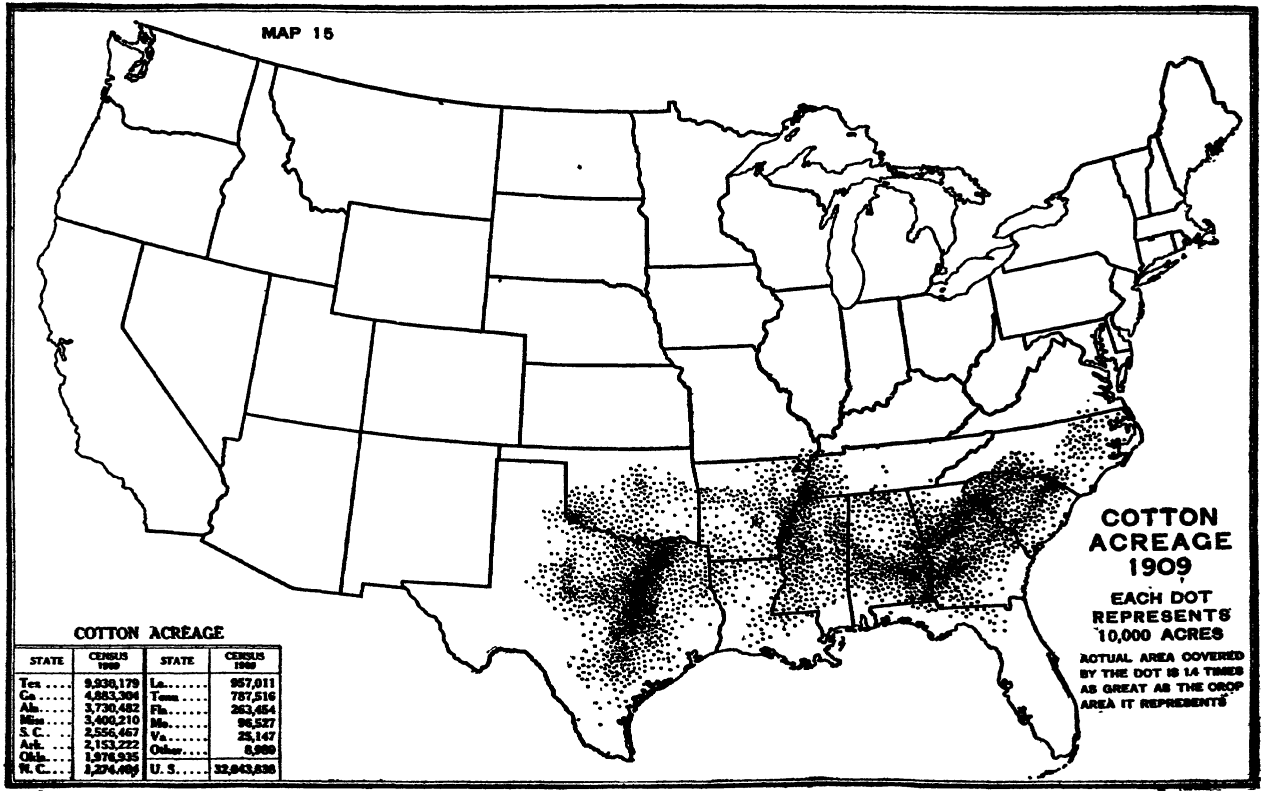
CORN, BUSHELS—Continued

| STATE | CENSUS 1909 | ESTIMATE 1915 |
|---|---|---|
| Colo.... | 4,903,304 | 11,200,000 |
| Del..... | 4,839,548 | 6,615,000 |
| Conn.... | 2,538,542 | 3,250,000 |
| Mass.... | 2,029,383 | 2,304,000 |

CORN, BUSHELS (Continued)

| STATE | CENSUS 1909 | ESTIMATE 1915 |
|---|---|---|
| Vt..... | 1,715,133 | 2,256,000 |
| N. Mex.. | 1,164,970 | 2,730,000 |
| Cal.... | 1,273,901 | 2,624,000 |
| N. H.... | 916,263 | 990,000 |
| Me..... | 646,082 | 656,000 |
| Wash... | 563,825 | 1,053,000 |
| Oreg.... | 451,757 | 1,155,000 |
| R. I..... | 396,193 | 516,000 |
| Idaho... | 318,181 | 770,000 |
| Ariz.... | 298,664 | 600,000 |
| Mont.. | 274,163 | 1,960,000 |
| Wyo. . | 176,354 | 625,000 |
| Utah ... | 169,086 | 442,000 |
| Nev .... | 28,779 | 35,000 |
| East .... | 1,312,813,900 | 1,561,436,000 |
| West . | 1,239,375,730 | 1,493,099,000 |
| U. S .... | 2,552,189,630 | 3,054,535,000 |

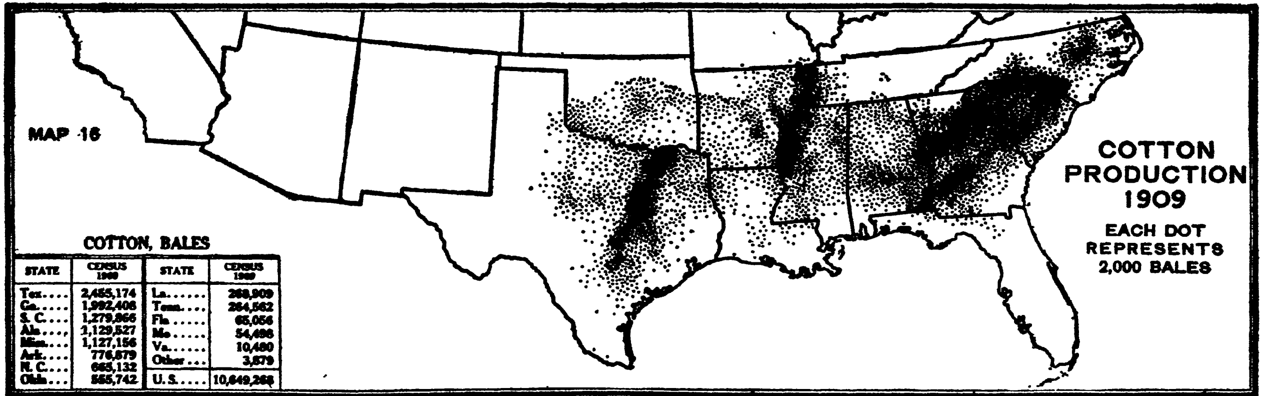
Compare with maps of corn (map 13) and value of farm property (map 9).



COTTON ACREAGE

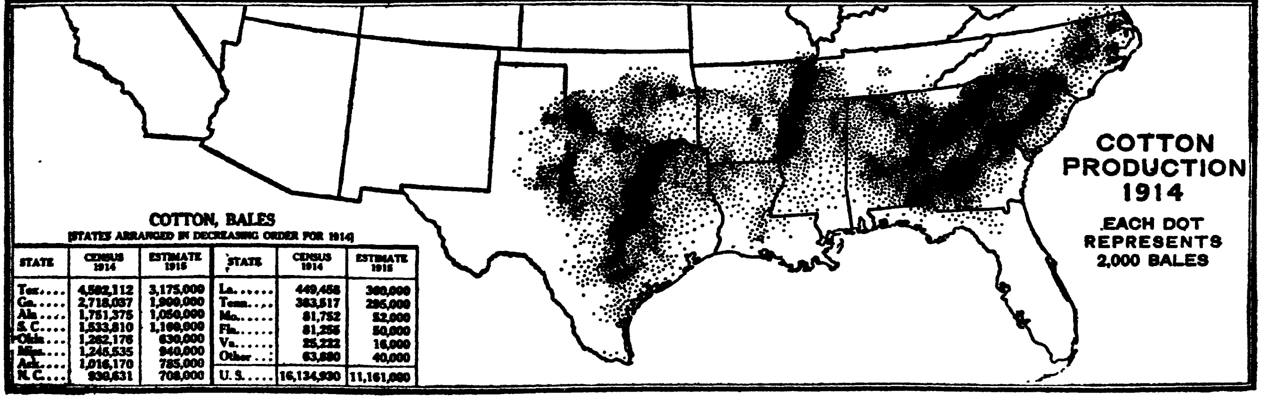
| STATE | CENSUS 1910 | STATE | CENSUS 1910 |
|---|---|---|---|
| Tex. | 9,930,179 | La. | 957,011 |
| Ga. | 4,883,304 | Tenn. | 787,516 |
| Ala. | 3,730,482 | Fla. | 263,454 |
| Miss. | 3,400,210 | Mo. | 96,527 |
| S. C. | 2,556,467 | Va. | 25,147 |
| Ark. | 2,153,222 | Other | 8,980 |
| Okla. | 1,976,935 | | |
| N. C. | 1,274,404 | U. S. | 32,043,838 |

Compare with maps of rural population (map 12), hay and forage (map 26), and mules (map 66).



COTTON, BALES

| STATE | CENSUS 1909 | STATE | CENSUS 1909 |
|---|---|---|---|
| Tex.... | 2,455,174 | La...... | 268,909 |
| Ga..... | 1,992,408 | Tenn.... | 264,562 |
| S. C.... | 1,279,866 | Fla..... | 65,056 |
| Ala..... | 1,129,527 | Mo..... | 54,496 |
| Miss.... | 1,127,156 | Va...... | 10,480 |
| Ark.... | 776,879 | Other... | 3,879 |
| N. C.... | 665,132 | | |
| Okla.... | 555,742 | U. S..... | 10,649,268 |

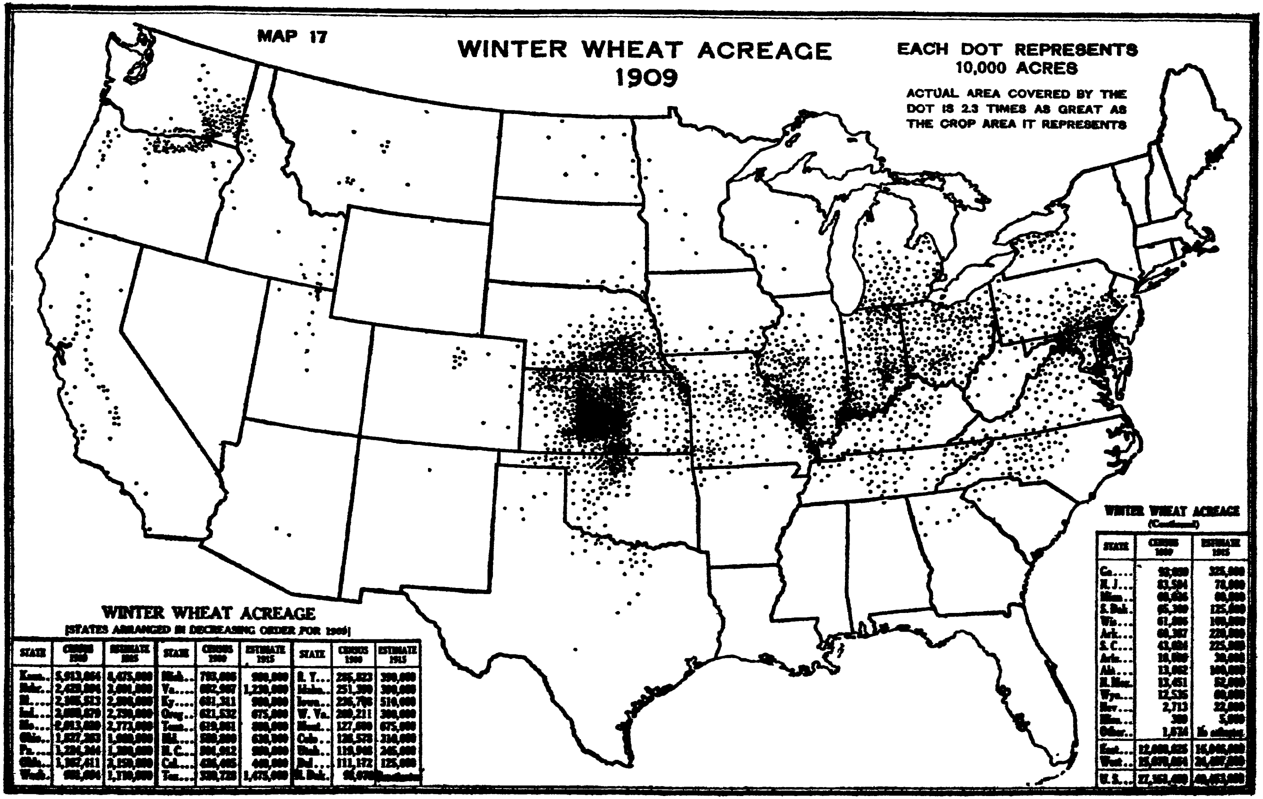


COTTON, BALES

[STATES ARRANGED IN DECREASING ORDER FOR 1914]

| STATE | CENSUS 1914 | ESTIMATE 1915 | STATE | CENSUS 1914 | ESTIMATE 1915 |
|---|---|---|---|---|---|
| Tex.... | 4,592,112 | 3,175,000 | La...... | 449,458 | 360,000 |
| Ga..... | 2,718,037 | 1,900,000 | Tenn.... | 383,517 | 295,000 |
| Ala..... | 1,751,375 | 1,050,000 | Mo...... | 81,752 | 52,000 |
| S. C.... | 1,533,810 | 1,160,000 | Fla...... | 81,256 | 50,000 |
| Okla.... | 1,262,176 | 630,000 | Va...... | 25,222 | 16,000 |
| Miss.... | 1,246,535 | 940,000 | Other... | 63,880 | 40,000 |
| Ark.... | 1,016,170 | 785,000 | | | |
| N. C.... | 930,631 | 708,000 | U. S..... | 16,134,930 | 11,161,000 |

Compare with map of value of farm land per acre (map 10).


MAP 17
WINTER WHEAT ACREAGE
1909
EACH DOT REPRESENTS
10,000 ACRES
ACTUAL AREA COVERED BY THE
DOT IS 2.3 TIMES AS GREAT AS
THE CROP AREA IT REPRESENTS

WINTER WHEAT ACREAGE

[STATES ARRANGED IN DECREASING ORDER FOR 1909]

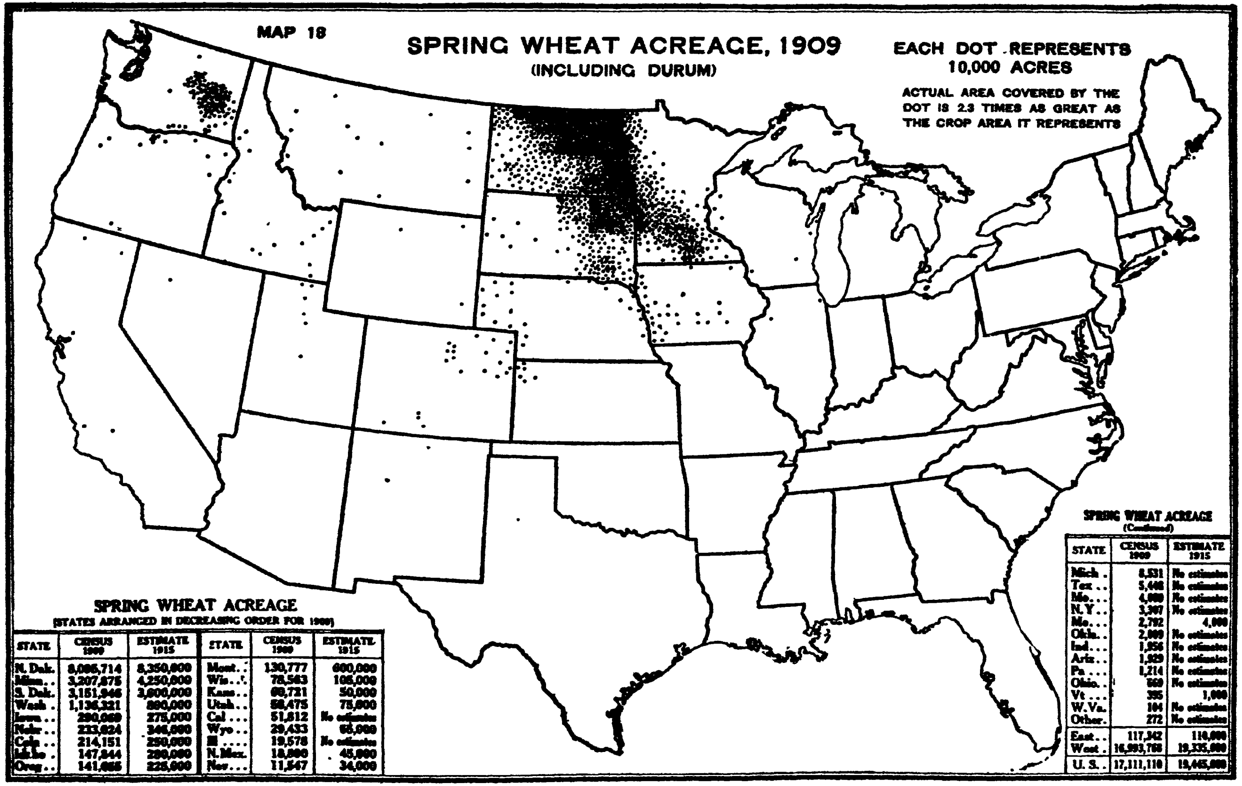
| STATE | CENSUS 1909 | ESTIMATE 1915 | STATE | CENSUS 1909 | ESTIMATE 1915 | STATE | CENSUS 1909 | ESTIMATE 1915 |
|---|---|---|---|---|---|---|---|---|
| Kans.. | 5,913,064 | 8,475,000 | Mich.. | 783,695 | 900,000 | N. Y... | 295,823 | 390,000 |
| Nebr.. | 2,428,094 | 3,091,000 | Va.... | 682,967 | 1,230,000 | Idaho.. | 251,390 | 390,000 |
| Ill.... | 2,105,513 | 2,304,000 | Ky.... | 681,311 | 900,000 | Iowa... | 236,798 | 510,000 |
| Ind... | 2,088,679 | 2,730,000 | Oreg.. | 621,532 | 675,000 | W. Va. | 200,211 | 390,000 |
| Mo... | 2,013,030 | 2,773,000 | Tenn.. | 619,061 | 800,000 | Mont.. | 127,690 | 675,000 |
| Ohio.. | 1,877,263 | 1,980,000 | Md.... | 598,300 | 630,000 | Colo... | 126,573 | 314,000 |
| Pa.... | 1,234,344 | 1,300,000 | N. C... | 501,912 | 900,000 | Utah.. | 119,948 | 245,000 |
| Okla.. | 1,187,411 | 3,150,000 | Cal.... | 486,465 | 400,000 | Del.... | 111,172 | 125,000 |
| Wash. | 985,604 | 1,170,000 | Tex.... | 368,728 | 1,475,000 | N. Dak. | 95,070 | No estimate |

WINTER WHEAT ACREAGE

(Continued)

| STATE | CENSUS 1909 | ESTIMATE 1915 |
|---|---|---|
| Ga.... | 93,030 | 325,000 |
| N. J... | 83,594 | 78,000 |
| Minn... | 69,626 | 80,000 |
| S. Dak.. | 65,300 | 125,000 |
| Wis.... | 61,896 | 100,000 |
| Ark.... | 60,387 | 220,000 |
| S. C.... | 43,024 | 225,000 |
| Ariz.... | 18,000 | 30,000 |
| Ala.... | 13,882 | 100,000 |
| N. Mex. | 13,451 | 52,000 |
| Wyo.... | 12,535 | 60,000 |
| Nev.... | 2,713 | 22,000 |
| Miss.... | 300 | 5,000 |
| Other.. | 1,874 | No estimate. |
| East... | 12,009,825 | 16,046,000 |
| West.. | 15,073,604 | 24,407,000 |
| U. S... | 27,153,429 | 40,453,000 |

Compare with maps of oats (map 21), corn (map 18), and hay and forage (map 26).


MAP 18
SPRING WHEAT ACREAGE, 1909
(INCLUDING DURUM)
EACH DOT REPRESENTS 10,000 ACRES
ACTUAL AREA COVERED BY THE DOT IS 2.3 TIMES AS GREAT AS THE CROP AREA IT REPRESENTS

SPRING WHEAT ACREAGE
(STATES ARRANGED IN DECREASING ORDER FOR 1909)

| STATE | CENSUS 1909 | ESTIMATE 1915 | STATE | CENSUS 1909 | ESTIMATE 1915 |
|---|---|---|---|---|---|
| N. Dak. | 8,096,714 | 8,350,000 | Mont. . | 130,777 | 600,000 |
| Minn. . | 3,207,875 | 4,250,000 | Wis. . . | 78,563 | 105,000 |
| S. Dak. | 3,151,946 | 3,600,000 | Kans. . | 68,721 | 50,000 |
| Wash . | 1,136,321 | 890,000 | Utah . . | 58,475 | 75,000 |
| Iowa . . | 290,069 | 275,000 | Cal . . . | 51,812 | No estimates |
| Nebr . . | 233,624 | 346,000 | Wyo . . | 29,433 | 65,000 |
| Colo . . | 214,151 | 250,000 | Ill . . . . | 19,578 | No estimates |
| Idaho . | 147,844 | 280,000 | N. Mex. | 18,800 | 45,000 |
| Oreg . . | 141,665 | 225,000 | Nev . . . | 11,547 | 34,000 |

SPRING WHEAT ACREAGE
(Continued)

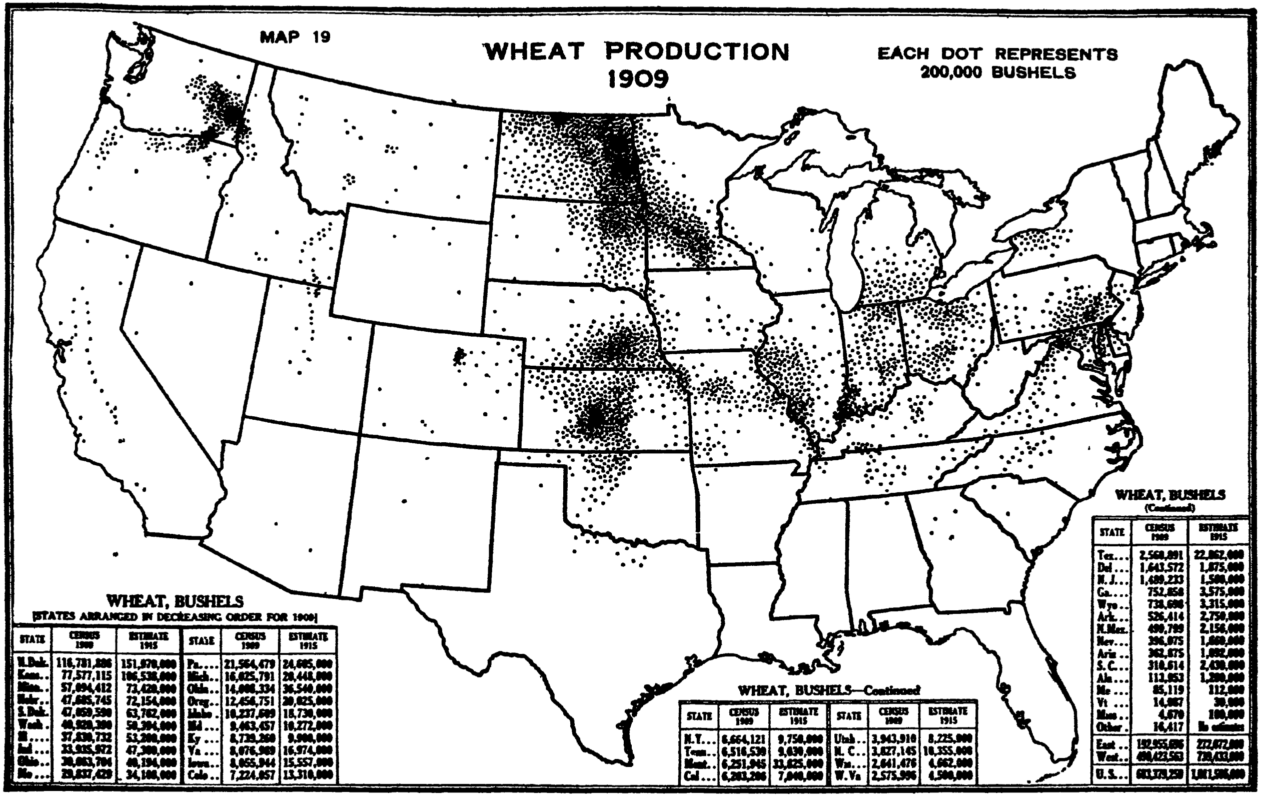
| STATE | CENSUS 1909 | ESTIMATE 1915 |
|---|---|---|
| Mich . | 8,531 | No estimates |
| Tex . . | 5,448 | No estimates |
| Mo. . . | 4,000 | No estimates |
| N. Y. . | 3,307 | No estimates |
| Me. . . | 2,792 | 4,000 |
| Okla. . | 2,009 | No estimates |
| Ind. . . | 1,956 | No estimates |
| Ariz . . | 1,929 | No estimates |
| Pa . . . | 1,214 | No estimates |
| Ohio. . | 569 | No estimates |
| Vt . . . | 395 | 1,000 |
| W. Va. | 104 | No estimates |
| Other. | 272 | No estimates |
| East . . | 117,342 | 110,000 |
| West . | 16,993,768 | 19,335,000 |
| U. S. . | 17,111,110 | 19,445,000 |

Compare with maps of winter wheat (map 17), corn (map 13), oats (map 21), barley (map 20), and flax (map 24).

MAP 19

## WHEAT PRODUCTION 1909

EACH DOT REPRESENTS 200,000 BUSHELS



**WHEAT, BUSHELS**

[STATES ARRANGED IN DECREASING ORDER FOR 1909]

| STATE | CENSUS 1909 | ESTIMATE 1915 | STATE | CENSUS 1909 | ESTIMATE 1915 |
|---|---|---|---|---|---|
| N.Dak. | 116,781,886 | 151,970,000 | Pa.... | 21,564,479 | 24,605,000 |
| Kans.. | 77,577,115 | 106,538,000 | Mich.. | 16,025,791 | 20,448,000 |
| Minn.. | 57,094,412 | 73,420,000 | Okla.. | 14,008,334 | 36,540,000 |
| Nebr.. | 47,685,745 | 72,154,000 | Oreg.. | 12,456,751 | 20,025,000 |
| S.Dak. | 47,059,590 | 63,762,000 | Idaho . | 10,237,609 | 18,730,000 |
| Wash . | 40,920,390 | 50,394,000 | Md.... | 9,463,457 | 10,272,000 |
| Ill.... | 37,830,732 | 53,200,000 | Ky.... | 8,739,260 | 9,900,000 |
| Ind.... | 33,935,972 | 47,300,000 | Va.... | 8,076,989 | 16,974,000 |
| Ohio.. | 30,663,704 | 40,194,000 | Iowa.. | 8,055,944 | 15,557,000 |
| Mo.... | 28,837,429 | 34,108,000 | Colo.. | 7,224,057 | 13,310,000 |

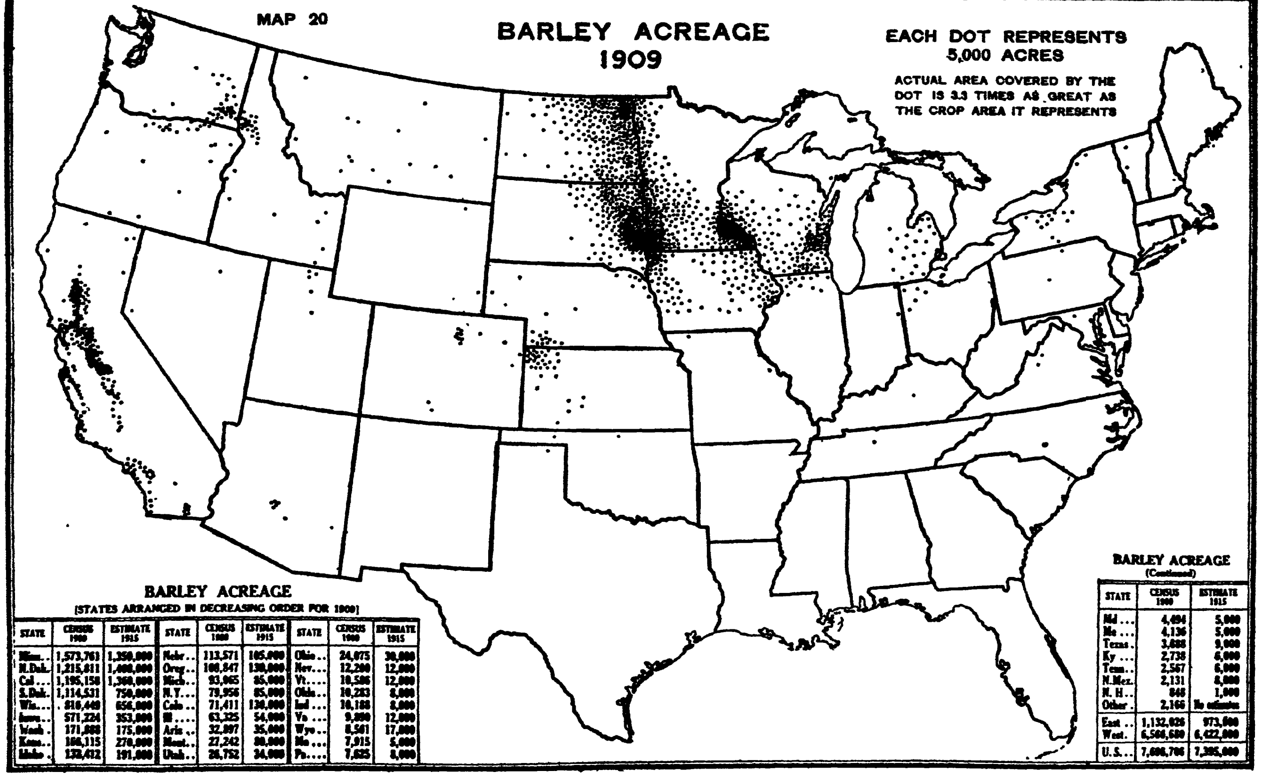
**WHEAT, BUSHELS—Continued**

| STATE | CENSUS 1909 | ESTIMATE 1915 | STATE | CENSUS 1909 | ESTIMATE 1915 |
|---|---|---|---|---|---|
| N.Y.... | 6,664,121 | 9,750,000 | Utah.. | 3,943,910 | 8,225,000 |
| Tenn.. | 6,516,530 | 9,630,000 | N. C.. | 3,827,145 | 10,355,000 |
| Mont.. | 6,251,945 | 33,825,000 | Wis.... | 2,641,476 | 4,662,000 |
| Cal.... | 6,283,206 | 7,040,000 | W.Va | 2,575,956 | 4,500,000 |

**WHEAT, BUSHELS**
(Continued)

| STATE | CENSUS 1909 | ESTIMATE 1915 |
|---|---|---|
| Tex.... | 2,560,891 | 22,862,000 |
| Del.... | 1,643,572 | 1,875,000 |
| N. J.... | 1,489,233 | 1,500,000 |
| Ga.... | 752,858 | 3,575,000 |
| Wyo.. | 738,698 | 3,315,000 |
| Ark.... | 526,414 | 2,750,000 |
| N.Mex. | 490,789 | 2,156,000 |
| Nev.... | 396,075 | 1,660,000 |
| Ariz.. | 362,875 | 1,092,000 |
| S. C.... | 310,614 | 2,438,000 |
| Ala.... | 113,853 | 1,290,000 |
| Me.... | 85,119 | 112,000 |
| Vt.... | 14,087 | 30,000 |
| Mass.. | 4,670 | 100,000 |
| Other. | 16,417 | No estimates |
| East.. | 192,955,696 | 272,072,000 |
| West.. | 490,423,563 | 739,433,000 |
| U.S.... | 683,379,259 | 1,011,505,000 |

Compare with maps of spring wheat (map 18) and winter wheat (map 17).


MAP 20
BARLEY ACREAGE
1909
EACH DOT REPRESENTS
5,000 ACRES
ACTUAL AREA COVERED BY THE DOT IS 3.3 TIMES AS GREAT AS THE CROP AREA IT REPRESENTS

**BARLEY ACREAGE**

[STATES ARRANGED IN DECREASING ORDER FOR 1909]

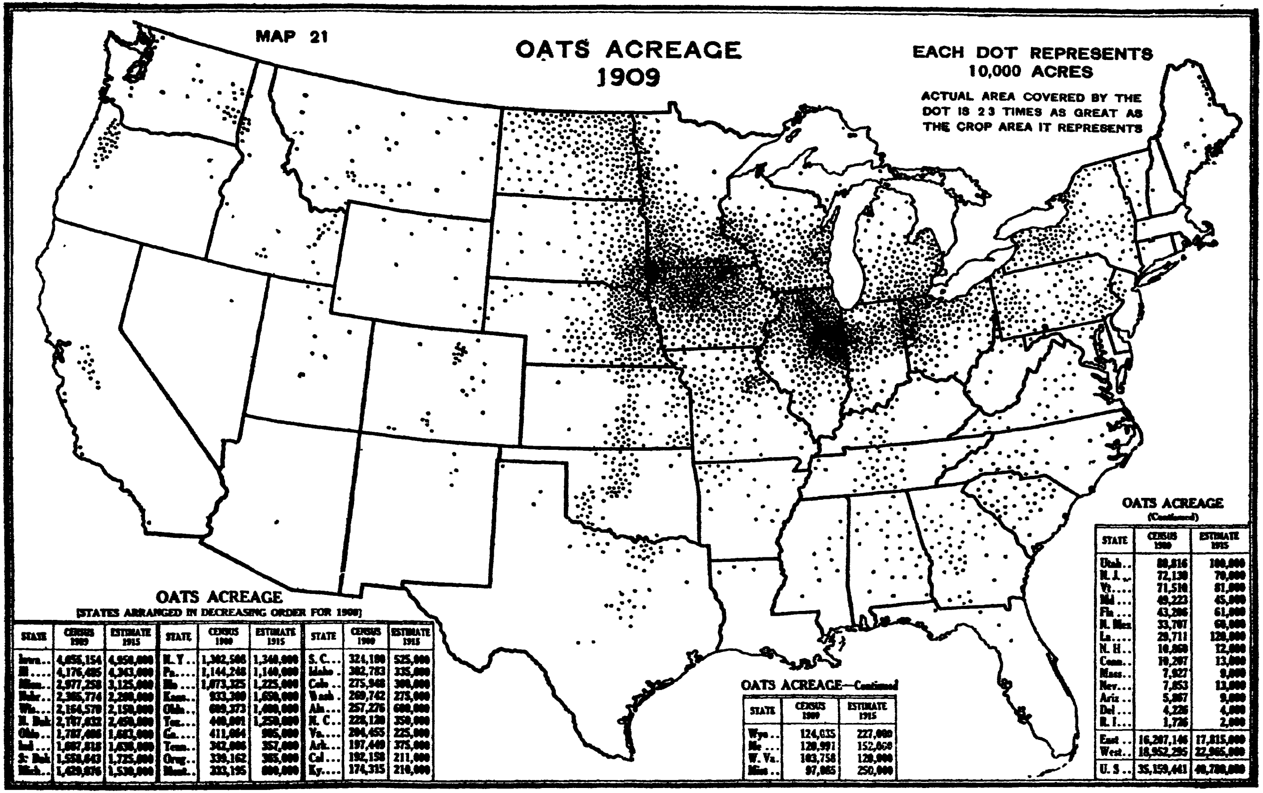
| STATE | CENSUS 1909 | ESTIMATE 1915 | STATE | CENSUS 1909 | ESTIMATE 1915 | STATE | CENSUS 1909 | ESTIMATE 1915 |
|---|---|---|---|---|---|---|---|---|
| Minn. . . | 1,573,763 | 1,350,000 | Nebr. . . | 113,571 | 105,000 | Ohio . . . | 24,075 | 30,000 |
| N.Dak. | 1,215,811 | 1,400,000 | Oreg. . . | 106,847 | 130,000 | Nev. . . . | 12,200 | 12,000 |
| Cal . . . | 1,195,158 | 1,360,000 | Mich. . . | 93,065 | 85,000 | Vt. . . . . | 10,506 | 12,000 |
| S.Dak. | 1,114,531 | 750,000 | N.Y. . . . | 79,956 | 85,000 | Okla. . . | 10,233 | 8,000 |
| Wis. . . . | 816,440 | 656,000 | Colo . . | 71,411 | 130,000 | Ind . . . | 10,188 | 8,000 |
| Iowa. . . | 571,224 | 353,000 | Ill . . . . | 63,325 | 54,000 | Va . . . | 9,050 | 12,000 |
| Wash . | 171,008 | 175,000 | Ariz . . | 32,897 | 35,000 | Wyo . . . | 8,561 | 17,000 |
| Kans. . . | 166,115 | 270,000 | Mont. . . | 27,242 | 80,000 | Mo . . . | 7,915 | 5,000 |
| Idaho . | 132,432 | 191,000 | Utah . . | 26,752 | 34,000 | Pa. . . . | 7,625 | 8,000 |

**BARLEY ACREAGE**

(Continued)

| STATE | CENSUS 1909 | ESTIMATE 1915 |
|---|---|---|
| Md . . . | 4,494 | 5,000 |
| Me . . . | 4,136 | 5,000 |
| Texas . | 3,088 | 9,000 |
| Ky . . . | 2,738 | 6,000 |
| Tenn. . . | 2,567 | 6,000 |
| N.Mex. | 2,131 | 8,000 |
| N. H. . . | 848 | 1,000 |
| Other . | 2,166 | No estimates |
| East . . | 1,132,026 | 973,000 |
| West. | 6,566,680 | 6,422,000 |
| U.S. . . | 7,698,706 | 7,395,000 |

**Compare with maps of spring wheat (map 18) and flax (map 24).**


MAP 21
OATS ACREAGE
1909
EACH DOT REPRESENTS
10,000 ACRES
ACTUAL AREA COVERED BY THE
DOT IS 23 TIMES AS GREAT AS
THE CROP AREA IT REPRESENTS

**OATS ACREAGE**

[STATES ARRANGED IN DECREASING ORDER FOR 1909]

| STATE | CENSUS 1909 | ESTIMATE 1915 | STATE | CENSUS 1909 | ESTIMATE 1915 | STATE | CENSUS 1909 | ESTIMATE 1915 |
|---|---|---|---|---|---|---|---|---|
| Iowa.. | 4,656,154 | 4,950,000 | N. Y.. | 1,302,506 | 1,340,000 | S. C... | 324,180 | 525,000 |
| Ill.... | 4,176,485 | 4,343,000 | Pa.... | 1,144,248 | 1,140,000 | Idaho. | 302,783 | 335,000 |
| Minn.. | 2,977,258 | 3,125,000 | Mo.... | 1,073,325 | 1,225,000 | Colo... | 275,948 | 300,000 |
| Nebr.. | 2,385,774 | 2,200,000 | Kans.. | 933,300 | 1,650,000 | Wash. | 269,742 | 275,000 |
| Wis... | 2,164,578 | 2,150,000 | Okla.. | 889,373 | 1,400,000 | Ala.... | 257,276 | 600,000 |
| N. Dak | 2,147,032 | 2,450,000 | Tex.... | 440,091 | 1,250,000 | N. C... | 228,120 | 350,000 |
| Ohio.. | 1,787,486 | 1,683,000 | Ga.... | 411,064 | 985,000 | Va.... | 204,455 | 225,000 |
| Ind.... | 1,687,818 | 1,630,000 | Tenn.. | 342,006 | 357,000 | Ark... | 197,449 | 375,000 |
| S. Dak | 1,558,643 | 1,725,000 | Oreg.. | 339,162 | 365,000 | Cal.... | 192,158 | 211,000 |
| Mich.. | 1,429,876 | 1,530,000 | Mont.. | 333,195 | 600,000 | Ky.... | 174,315 | 210,000 |

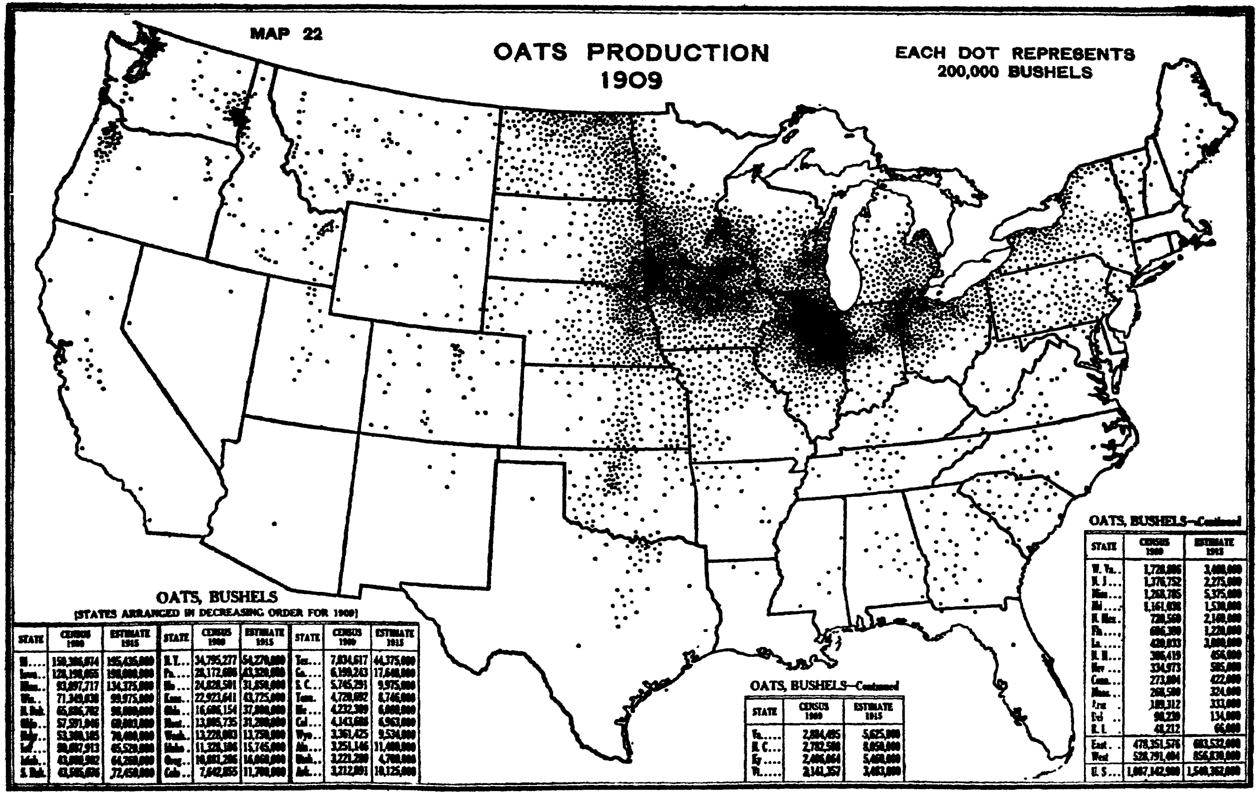
**OATS ACREAGE—Continued**

| STATE | CENSUS 1909 | ESTIMATE 1915 |
|---|---|---|
| Wyo... | 124,035 | 227,000 |
| Me.... | 120,991 | 152,000 |
| W. Va. | 103,758 | 128,000 |
| Miss... | 97,085 | 250,000 |

**OATS ACREAGE**
(Continued)

| STATE | CENSUS 1909 | ESTIMATE 1915 |
|---|---|---|
| Utah.. | 88,816 | 100,000 |
| N. J... | 72,130 | 70,000 |
| Vt..... | 71,510 | 81,000 |
| Md.... | 49,223 | 45,000 |
| Fla.... | 43,206 | 61,000 |
| N. Mex | 33,707 | 68,000 |
| La..... | 29,711 | 128,000 |
| N. H... | 10,868 | 12,000 |
| Conn.. | 10,207 | 13,000 |
| Mass.. | 7,927 | 9,000 |
| Nev.... | 7,853 | 13,000 |
| Ariz... | 5,867 | 9,000 |
| Del.... | 4,226 | 4,000 |
| R. I.... | 1,726 | 2,000 |
| East... | 16,207,146 | 17,815,000 |
| West.. | 18,952,295 | 22,965,000 |
| U. S... | 35,159,441 | 40,780,000 |

Compare with maps of corn (map 13) and hay and forage (map 26).



**OATS, BUSHELS**

[STATES ARRANGED IN DECREASING ORDER FOR 1909]

| STATE | CENSUS 1909 | ESTIMATE 1915 | STATE | CENSUS 1909 | ESTIMATE 1915 | STATE | CENSUS 1909 | ESTIMATE 1915 |
|---|---|---|---|---|---|---|---|---|
| Ill.... | 150,386,074 | 195,435,000 | N. Y... | 34,795,277 | 54,270,000 | Tex... | 7,034,617 | 44,375,000 |
| Iowa.. | 128,198,055 | 198,000,000 | Pa.... | 28,172,006 | 43,320,000 | Ga.... | 6,190,243 | 17,640,000 |
| Minn.. | 93,897,717 | 134,375,000 | Mo.... | 24,828,501 | 31,850,000 | S. C... | 5,745,291 | 9,975,000 |
| Wis.. | 71,349,038 | 99,975,000 | Kans.. | 22,923,641 | 43,725,000 | Tenn. | 4,720,082 | 8,746,000 |
| N. Dak. | 65,886,702 | 98,000,000 | Okla... | 16,606,154 | 37,000,000 | Me.... | 4,232,309 | 6,000,000 |
| Ohio... | 57,591,046 | 69,003,000 | Mont... | 13,805,735 | 31,200,000 | Cal.... | 4,143,688 | 6,963,000 |
| Ind.... | 53,300,185 | 70,400,000 | Wash.. | 13,228,003 | 13,750,000 | Wyo... | 3,361,425 | 9,534,000 |
| Nebr.... | 50,087,913 | 65,520,000 | Idaho. | 11,328,306 | 15,765,000 | Ala.... | 3,251,146 | 11,400,000 |
| Mich... | 43,869,582 | 64,260,000 | Oreg... | 10,881,295 | 16,000,000 | Utah.. | 3,221,280 | 4,700,000 |
| S. Dak. | 43,565,626 | 72,450,000 | Colo... | 7,642,855 | 11,700,000 | Ark.... | 3,212,891 | 10,125,000 |

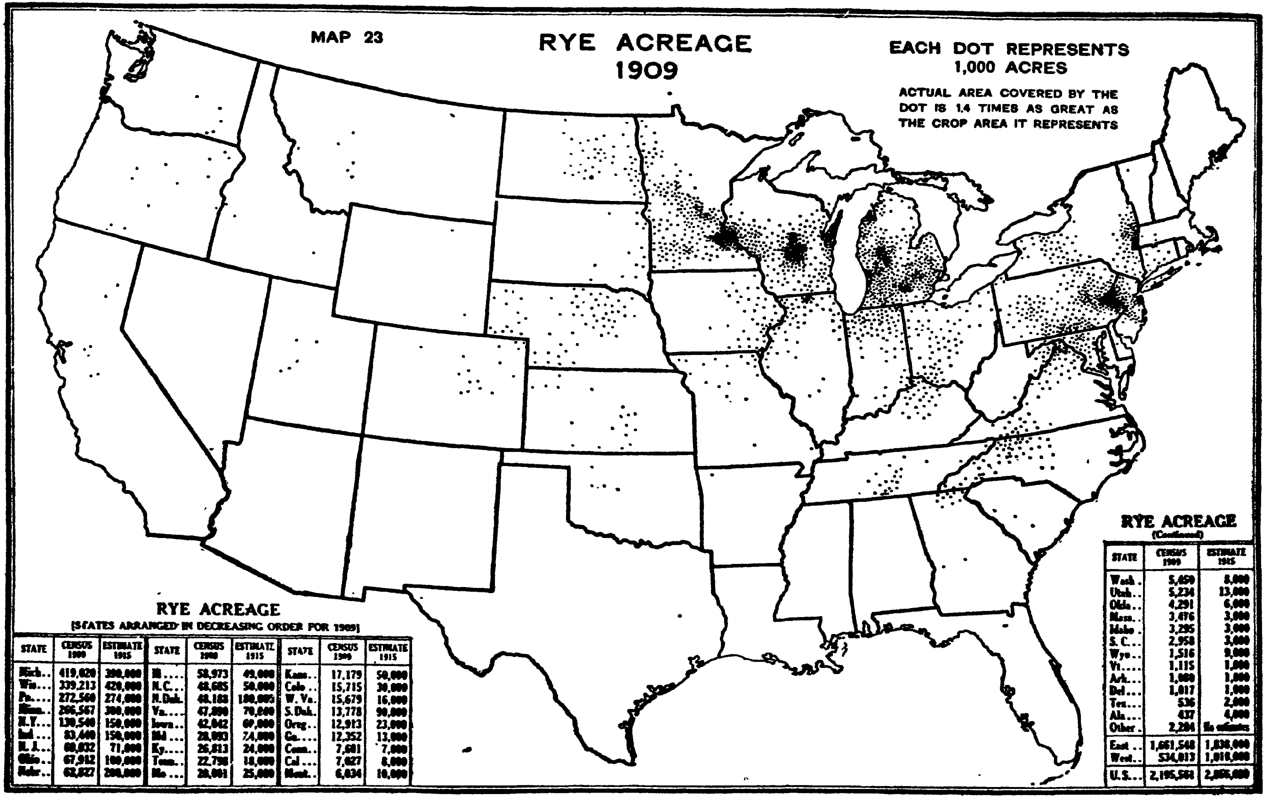
**OATS, BUSHELS—Continued**

| STATE | CENSUS 1909 | ESTIMATE 1915 |
|---|---|---|
| Va..... | 2,884,495 | 5,625,000 |
| N. C.... | 2,782,500 | 8,050,000 |
| Ky..... | 2,406,064 | 5,460,000 |
| Vt..... | 2,141,357 | 3,403,000 |

**OATS, BUSHELS—Continued**

| STATE | CENSUS 1909 | ESTIMATE 1915 |
|---|---|---|
| W. Va.. | 1,728,006 | 3,400,000 |
| N. J... | 1,376,752 | 2,275,000 |
| Miss... | 1,268,785 | 5,375,000 |
| Md.... | 1,161,038 | 1,530,000 |
| N. Mex. | 728,560 | 2,160,000 |
| Fla...., | 696,300 | 1,220,000 |
| La..... | 420,033 | 3,000,000 |
| N. H.... | 306,419 | 456,000 |
| Nev .... | 334,973 | 595,000 |
| Conn... | 273,904 | 422,000 |
| Mass... | 268,500 | 324,000 |
| Ariz .. | 103,312 | 333,000 |
| Del .. | 98,230 | 134,000 |
| R. I. . | 48,212 | 66,000 |
| East . . | 478,351,576 | 683,532,000 |
| West | 528,791,404 | 856,830,000 |
| U. S... | 1,007,142,980 | 1,540,362,000 |

Compare with maps of horses (map 65) and mules (map 66).


MAP 23
RYE ACREAGE
1909
EACH DOT REPRESENTS
1,000 ACRES
ACTUAL AREA COVERED BY THE DOT IS 1.4 TIMES AS GREAT AS THE CROP AREA IT REPRESENTS

### RYE ACREAGE

[STATES ARRANGED IN DECREASING ORDER FOR 1909]

| STATE | CENSUS 1909 | ESTIMATE 1915 | STATE | CENSUS 1909 | ESTIMATE 1915 | STATE | CENSUS 1909 | ESTIMATE 1915 |
|---|---|---|---|---|---|---|---|---|
| Mich.. | 419,020 | 390,000 | Ill.... | 58,973 | 49,000 | Kans.. | 17,179 | 50,000 |
| Wis... | 339,213 | 420,000 | N.C... | 48,685 | 50,000 | Colo.. | 15,715 | 30,000 |
| Pa.... | 272,560 | 274,000 | N.Dak. | 48,188 | 180,000 | W. Va.. | 15,679 | 16,000 |
| Minn.. | 266,567 | 300,000 | Va.... | 47,890 | 70,000 | S.Dak.. | 13,778 | 90,000 |
| N.Y... | 130,540 | 150,000 | Iowa.. | 42,042 | 69,000 | Oreg.. | 12,913 | 23,000 |
| Ind... | 83,440 | 150,000 | Md... | 28,093 | 24,000 | Ga.... | 12,352 | 13,000 |
| N.J... | 68,032 | 71,000 | Ky.... | 26,813 | 24,000 | Conn.. | 7,681 | 7,000 |
| Ohio.. | 67,912 | 100,000 | Tenn.. | 22,798 | 18,000 | Cal... | 7,027 | 8,000 |
| Nebr.. | 62,827 | 200,000 | Mo... | 20,911 | 25,000 | Mont.. | 6,034 | 10,000 |

### RYE ACREAGE

(Continued)

| STATE | CENSUS 1909 | ESTIMATE 1915 |
|---|---|---|
| Wash. | 5,450 | 8,000 |
| Utah.. | 5,234 | 13,000 |
| Okla.. | 4,291 | 6,000 |
| Mass.. | 3,476 | 3,000 |
| Maine. | 3,295 | 3,000 |
| S. C... | 2,958 | 3,000 |
| Wyo.. | 1,516 | 9,000 |
| Vt.... | 1,115 | 1,000 |
| Ark... | 1,090 | 1,000 |
| Del... | 1,017 | 1,000 |
| Tex... | 536 | 2,000 |
| Ala... | 437 | 4,000 |
| Other. | 2,284 | No estimates |
| East.. | 1,661,548 | 1,838,000 |
| West.. | 534,013 | 1,018,000 |
| U.S... | 2,195,561 | 2,856,000 |

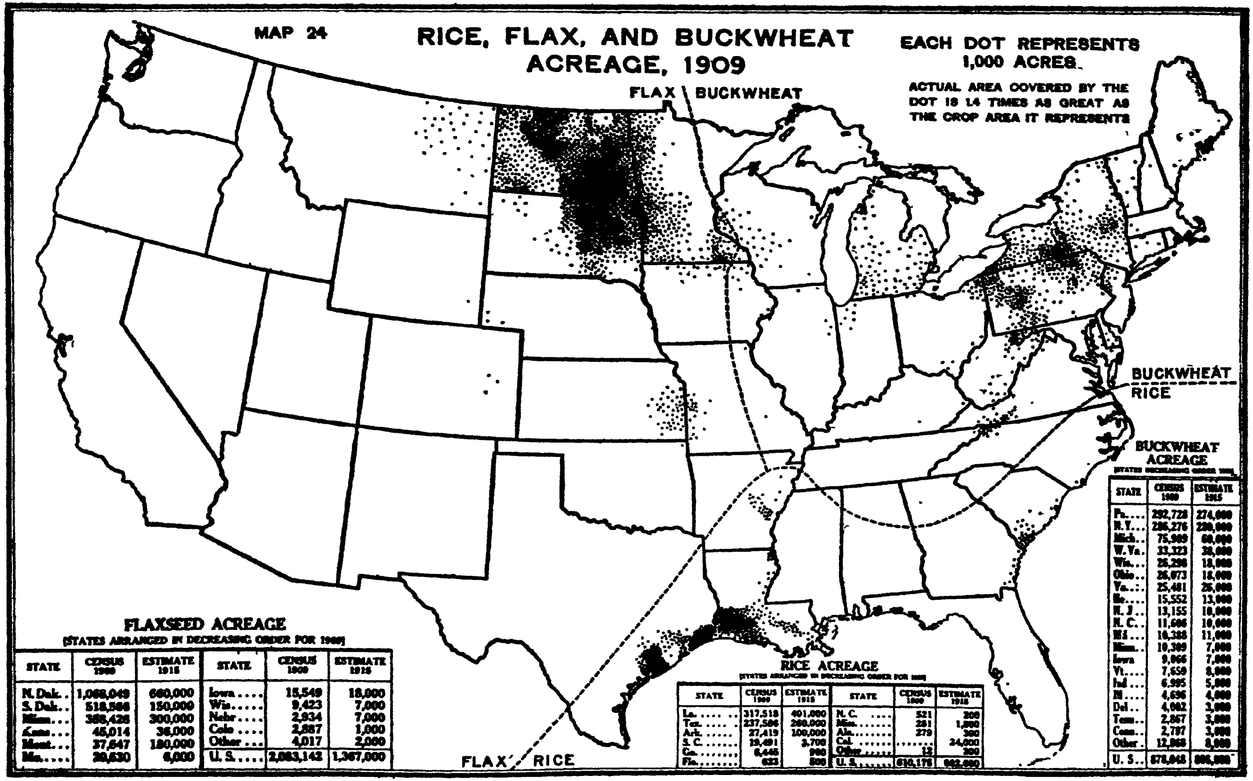
Compare with maps of winter wheat (map 17) and potatoes (map 39).

MAP 24

## RICE, FLAX, AND BUCKWHEAT ACREAGE, 1909

EACH DOT REPRESENTS 1,000 ACRES.

ACTUAL AREA COVERED BY THE DOT IS 1.4 TIMES AS GREAT AS THE CROP AREA IT REPRESENTS



**FLAXSEED ACREAGE**
[STATES ARRANGED IN DECREASING ORDER FOR 1909]

| STATE | CENSUS 1909 | ESTIMATE 1915 | STATE | CENSUS 1909 | ESTIMATE 1915 |
|---|---|---|---|---|---|
| N. Dak. . . | 1,068,049 | 660,000 | Iowa . . . . | 15,549 | 18,000 |
| S. Dak. . . | 518,566 | 150,000 | Wis. . . . . | 9,423 | 7,000 |
| Minn. . . . | 368,426 | 300,000 | Nebr. . . . | 2,934 | 7,000 |
| Kans. . . . | 45,014 | 36,000 | Colo . . . . | 2,887 | 1,000 |
| Mont. . . . | 37,647 | 180,000 | Other . . . | 4,017 | 2,000 |
| Mo. . . . . | 20,630 | 6,000 | U. S. . . . . | 2,083,142 | 1,367,000 |

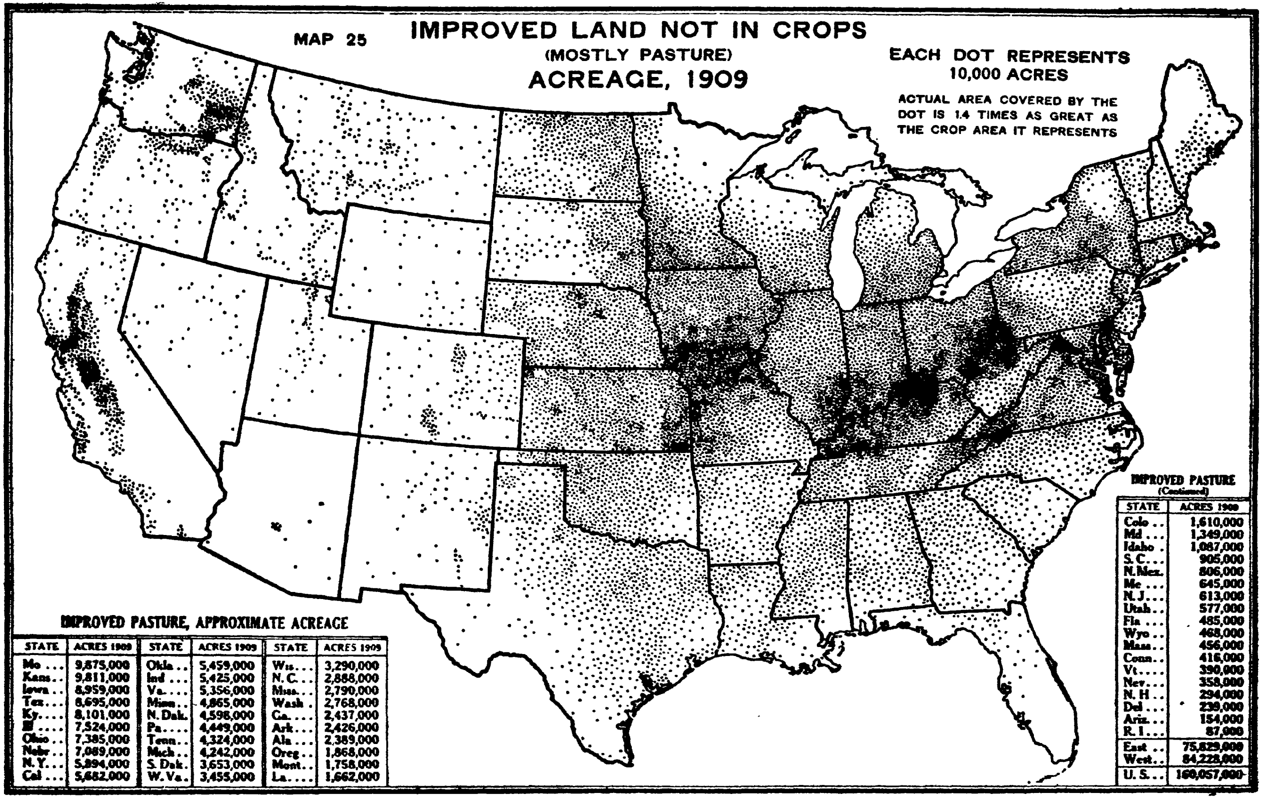
**RICE ACREAGE**
[STATES ARRANGED IN DECREASING ORDER FOR 1909]

| STATE | CENSUS 1909 | ESTIMATE 1915 | STATE | CENSUS 1909 | ESTIMATE 1915 |
|---|---|---|---|---|---|
| La. . . . . . . | 317,518 | 401,000 | N. C. . . . . | 521 | 200 |
| Tex. . . . . . | 237,586 | 260,000 | Miss. . . . . . . | 281 | 1,800 |
| Ark. . . . . . | 27,419 | 100,000 | Ala. . . . . . . . | 279 | 300 |
| S. C. . . . . . . | 19,491 | 3,700 | Cal. . . . . . . | . . . . . . . . | 24,000 |
| Ga. . . . . . . . | 6,445 | 900 | Other . . . . . . | 12 | 300 |
| Fla. . . . . . . . | 633 | 500 | U. S. . . . . . . | 610,175 | 802,000 |

**BUCKWHEAT ACREAGE**
[STATES DECREASING ORDER 1909]

| STATE | CENSUS 1909 | ESTIMATE 1915 |
|---|---|---|
| Pa. . . . | 292,728 | 274,000 |
| N. Y. . . | 286,276 | 280,000 |
| Mich. . | 75,909 | 60,000 |
| W. Va. | 33,323 | 38,000 |
| Wis. . . | 26,290 | 18,000 |
| Ohio . . | 26,073 | 18,000 |
| Va. . . . | 25,481 | 25,000 |
| Me. . . . | 15,552 | 13,000 |
| N. J. . . | 13,155 | 10,000 |
| N. C. . . | 11,606 | 10,000 |
| Md. . . . | 10,388 | 11,000 |
| Minn. . | 10,309 | 7,000 |
| Iowa | 9,066 | 7,000 |
| Vt. . . . | 7,659 | 8,000 |
| Ind . . . | 6,995 | 5,000 |
| Ill . . . . | 4,696 | 4,000 |
| Del . . | 4,002 | 3,000 |
| Tenn. . | 2,867 | 3,000 |
| Conn. . | 2,797 | 3,000 |
| Other . | 12,968 | 8,000 |
| U. S. . | 878,048 | 806,000 |

Compare flax with spring wheat (map 18), rice with sugar cane (map 38), and buckwheat with timothy and clover mixed (map 28).



MAP 25

IMPROVED LAND NOT IN CROPS
(MOSTLY PASTURE)
ACREAGE, 1909

EACH DOT REPRESENTS 10,000 ACRES

ACTUAL AREA COVERED BY THE DOT IS 1.4 TIMES AS GREAT AS THE CROP AREA IT REPRESENTS

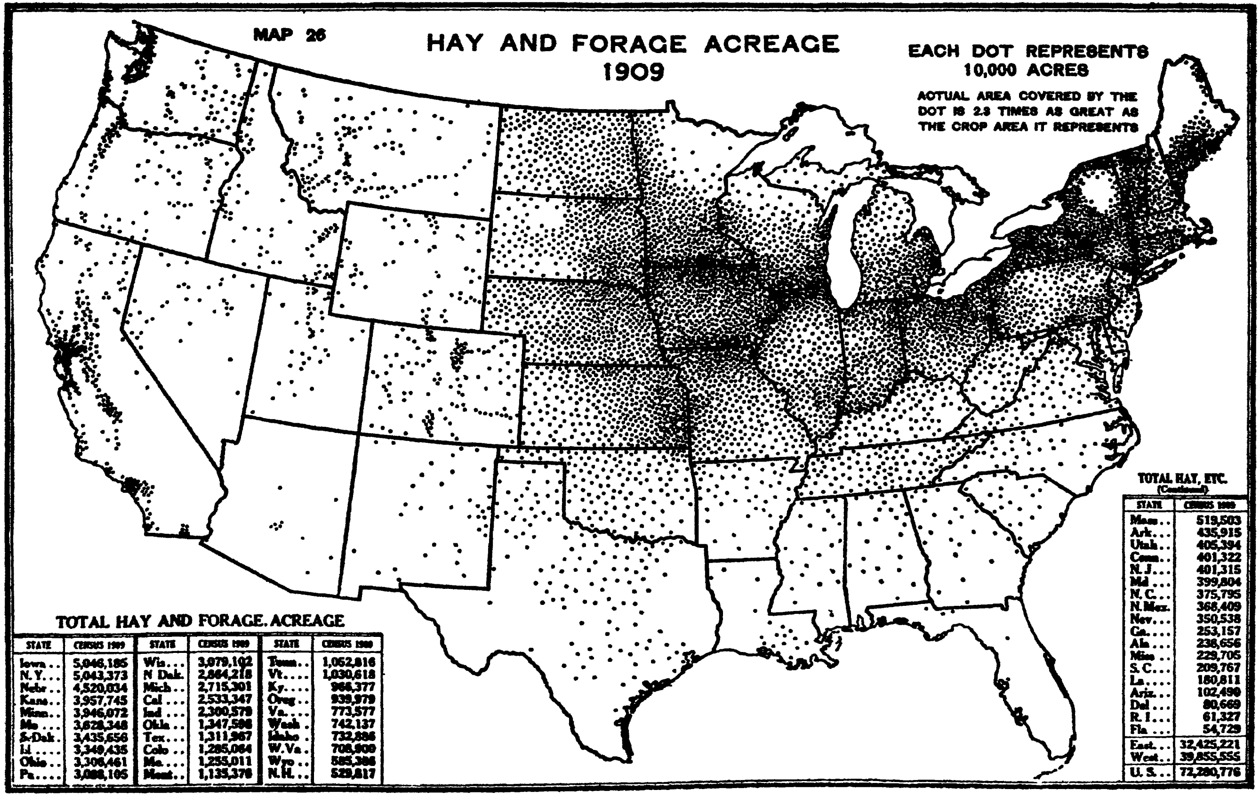
**IMPROVED PASTURE, APPROXIMATE ACREAGE**

| STATE | ACRES 1909 | STATE | ACRES 1909 | STATE | ACRES 1909 |
|---|---|---|---|---|---|
| Mo . . . | 9,875,000 | Okla . . | 5,459,000 | Wis. . . | 3,290,000 |
| Kans. . | 9,811,000 | Ind . . . | 5,425,000 | N. C. . . | 2,888,000 |
| Iowa . . | 8,959,000 | Va. . . . | 5,356,000 | Miss. . . | 2,790,000 |
| Tex. . . . | 8,695,000 | Minn . . | 4,865,000 | Wash . | 2,768,000 |
| Ky. . . . | 8,101,000 | N. Dak. | 4,598,000 | Ga. . . . | 2,437,000 |
| Ill . . . . | 7,524,000 | Pa. . . . | 4,449,000 | Ark . . . | 2,426,000 |
| Ohio . . | 7,385,000 | Tenn. . | 4,324,000 | Ala . . . | 2,389,000 |
| Nebr . . | 7,089,000 | Mich . . | 4,242,000 | Oreg . . | 1,868,000 |
| N. Y. . . | 5,894,000 | S. Dak. | 3,653,000 | Mont. . | 1,758,000 |
| Cal . . . | 5,682,000 | W. Va. . | 3,455,000 | La. . . . | 1,662,000 |

**IMPROVED PASTURE**
(Continued)

| STATE | ACRES 1909 |
|---|---|
| Colo . . | 1,610,000 |
| Md . . . | 1,349,000 |
| Idaho . | 1,087,000 |
| S. C. . . | 905,000 |
| N. Mex. | 806,000 |
| Me . . . | 645,000 |
| N. J. . . | 613,000 |
| Utah . . | 577,000 |
| Fla . . . | 485,000 |
| Wyo . . | 468,000 |
| Mass . . | 456,000 |
| Conn. . | 416,000 |
| Vt. . . . | 390,000 |
| Nev. . . | 358,000 |
| N. H . . | 294,000 |
| Del . . . | 239,000 |
| Ariz. . . | 154,000 |
| R. I. . . | 87,000 |
| East . . | 75,829,000 |
| West. . | 84,228,000 |
| U. S. . . | 160,057,000 |

Compare with maps of cattle (map 67), steers and bulls (map 68), and dairy cows (map 69).



MAP 26

HAY AND FORAGE ACREAGE
1909

EACH DOT REPRESENTS
10,000 ACRES

ACTUAL AREA COVERED BY THE DOT IS 2.3 TIMES AS GREAT AS THE CROP AREA IT REPRESENTS

TOTAL HAY AND FORAGE. ACREAGE

| STATE | CENSUS 1909 | STATE | CENSUS 1909 | STATE | CENSUS 1909 |
|---|---|---|---|---|---|
| Iowa.. | 5,046,185 | Wis... | 3,079,102 | Tenn.. | 1,052,816 |
| N. Y... | 5,043,373 | N Dak. | 2,864,218 | Vt.... | 1,030,618 |
| Nebr.. | 4,520,034 | Mich.. | 2,715,301 | Ky.... | 966,377 |
| Kans.. | 3,957,745 | Cal... | 2,533,347 | Oreg.. | 939,979 |
| Minn.. | 3,946,072 | Ind... | 2,300,579 | Va.... | 773,577 |
| Mo... | 3,628,348 | Okla.. | 1,347,598 | Wash. | 742,137 |
| S-Dak. | 3,435,656 | Tex... | 1,311,967 | Idaho. | 732,886 |
| Ill.... | 3,349,435 | Colo.. | 1,285,064 | W. Va.. | 708,909 |
| Ohio.. | 3,306,461 | Me.... | 1,255,011 | Wyo.. | 585,386 |
| Pa.... | 3,088,105 | Mont.. | 1,135,376 | N.H... | 529,817 |

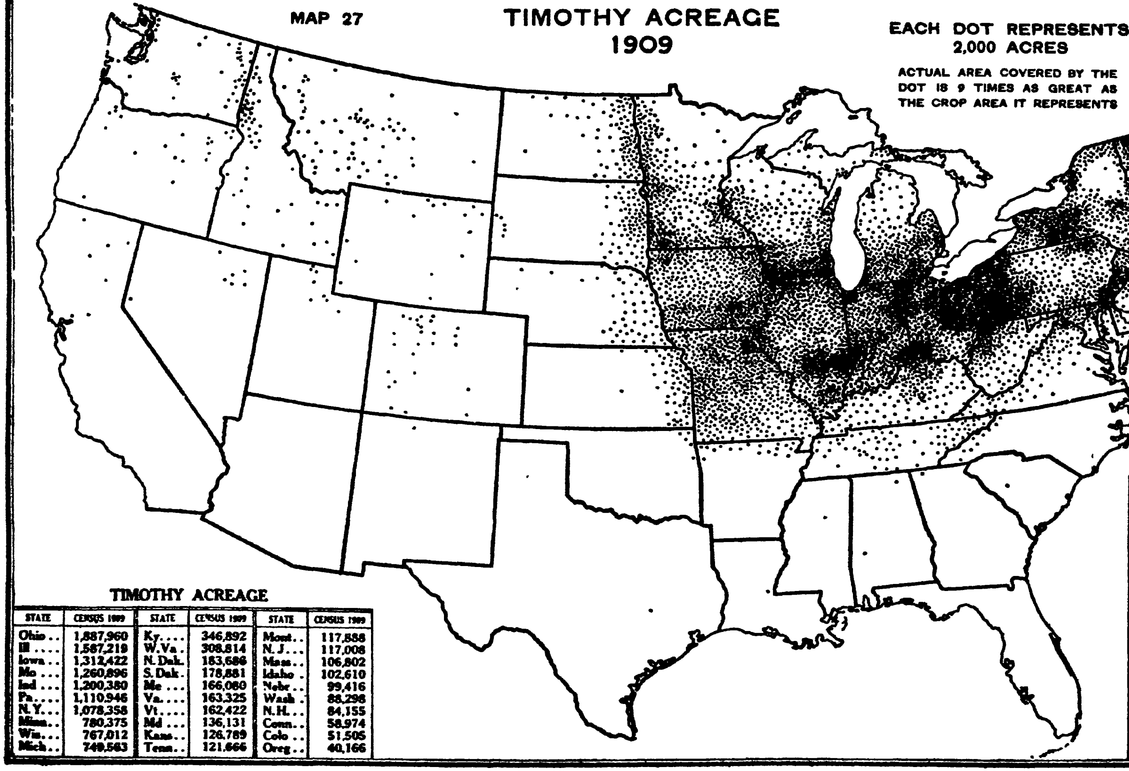
TOTAL HAY, ETC.
(Continued)

| STATE | CENSUS 1909 |
|---|---|
| Mass.. | 519,503 |
| Ark... | 435,915 |
| Utah.. | 405,394 |
| Conn.. | 401,322 |
| N. J... | 401,315 |
| Md... | 399,804 |
| N. C... | 375,795 |
| N. Mex. | 368,409 |
| Nev... | 350,538 |
| Ga.... | 253,157 |
| Ala... | 238,656 |
| Miss.. | 229,705 |
| S. C... | 209,767 |
| La.... | 180,811 |
| Ariz... | 102,490 |
| Del... | 80,669 |
| R. I... | 61,327 |
| Fla... | 54,729 |
| East... | 32,425,221 |
| West.. | 39,855,555 |
| U. S... | 72,280,776 |

Compare with maps of cattle (map 67), steers and bulls (map 68), and dairy cows (map 69).

MAP 27

## TIMOTHY ACREAGE 1909



EACH DOT REPRESENTS 2,000 ACRES

ACTUAL AREA COVERED BY THE DOT IS 9 TIMES AS GREAT AS THE CROP AREA IT REPRESENTS

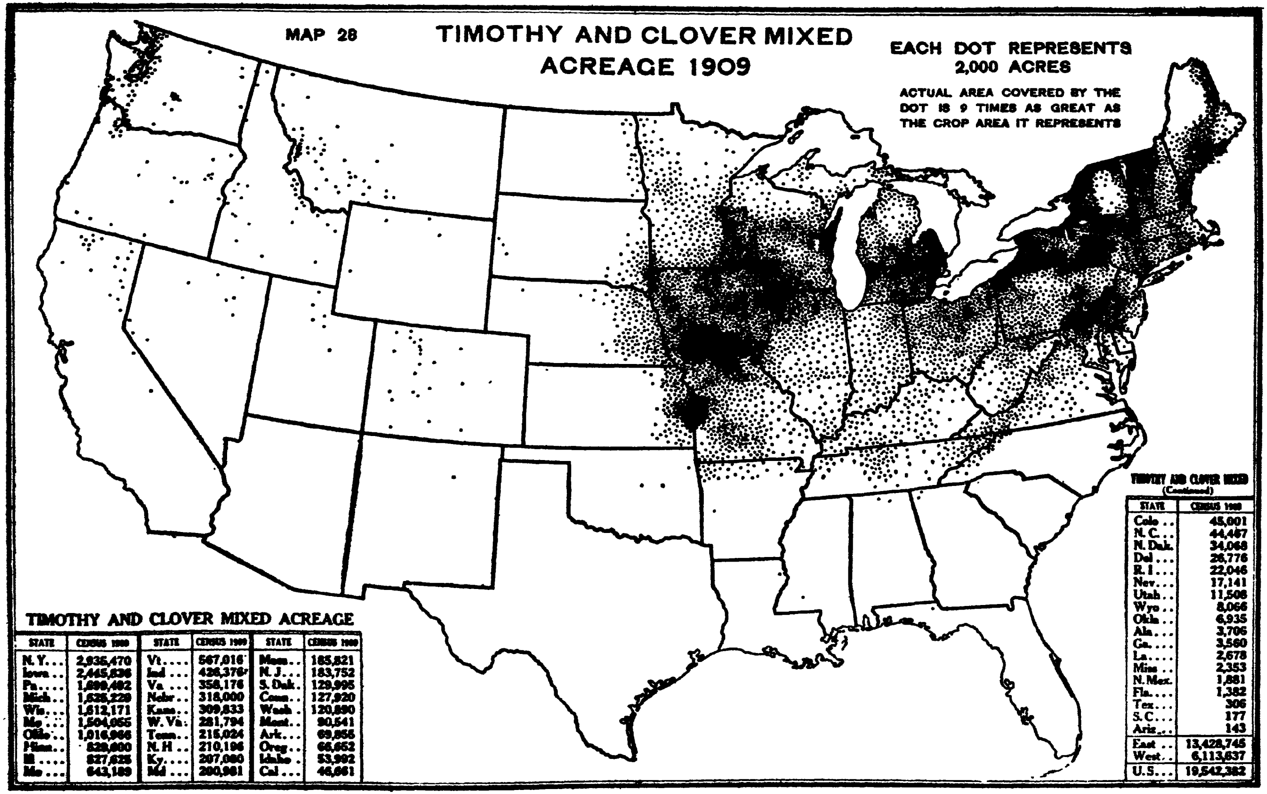
TIMOTHY ACREAGE

| STATE | CENSUS 1909 | STATE | CENSUS 1909 | STATE | CENSUS 1909 |
|---|---|---|---|---|---|
| Ohio . . | 1,887,960 | Ky. . . . . | 346,892 | Mont. . | 117,858 |
| Ill . . . . | 1,587,219 | W. Va. . | 308,814 | N. J. . . . | 117,008 |
| Iowa . . | 1,312,422 | N. Dak. | 183,686 | Mass. . | 106,802 |
| Mo . . . | 1,260,896 | S. Dak. . | 178,881 | Idaho . | 102,610 |
| Ind . . . | 1,200,380 | Me . . . . | 166,080 | Nebr. . | 99,416 |
| Pa. . . . . | 1,110,946 | Va. . . . . | 163,325 | Wash . | 88,298 |
| N. Y. . . | 1,078,358 | Vt. . . . . | 162,422 | N. H. . . | 84,155 |
| Minn. . | 780,375 | Md . . . . | 136,131 | Conn. . | 58,974 |
| Wis. . . | 767,012 | Kans. . | 126,789 | Colo . . | 51,505 |
| Mich. . | 749,563 | Tenn. . | 121,666 | Oreg. . | 40,166 |

TIMOTHY ACREAGE (Continued)

| STATE | CENSUS 1909 |
|---|---|
| Ark. . . . | 36,964 |
| Wyo . . | 29,433 |
| N. C. . . | 18,400 |
| Del . . . | 17,676 |
| Utah . . | 16,819 |
| R. I. . . . | 16,604 |
| Nev. . . . | 14,954 |
| Cal . . . . | 13,725 |
| Okla . . | 9,690 |
| Ala . . . . | 3,979 |
| Ga. . . . . | 2,963 |
| N. Mex. | 2,370 |
| S. C. . . . | 1,966 |
| Miss . . | 1,082 |
| Tex. . . . | 1,077 |
| La. . . . . | 1,048 |
| Fla . . . . | 884 |
| Ariz. . . . | 120 |
| East. . . | 10,217,261 |
| West . . | 4,469,132 |
| U. S. . . | 14,686,393 |

Compare with maps of corn (map 13) and cotton (map 15).


MAP 28
TIMOTHY AND CLOVER MIXED ACREAGE 1909
EACH DOT REPRESENTS 2,000 ACRES
ACTUAL AREA COVERED BY THE DOT IS 9 TIMES AS GREAT AS THE CROP AREA IT REPRESENTS

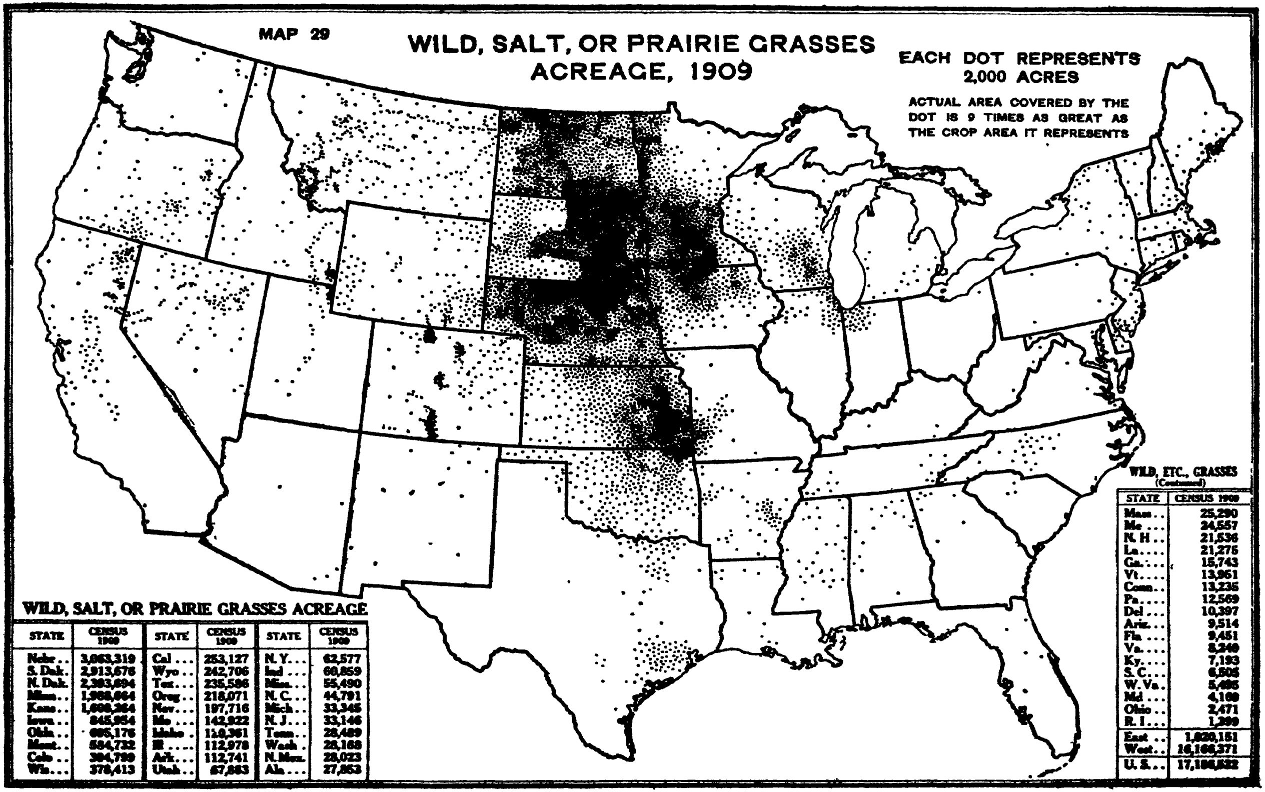
TIMOTHY AND CLOVER MIXED ACREAGE

| STATE | CENSUS 1909 | STATE | CENSUS 1909 | STATE | CENSUS 1909 |
|---|---|---|---|---|---|
| N. Y. . . . | 2,936,470 | Vt. . . . . | 567,016 | Mass. . . | 185,821 |
| Iowa . . . | 2,445,836 | Ind . . . . | 426,379 | N. J. . . . | 183,752 |
| Pa. . . . . | 1,699,482 | Va . . . . | 358,176 | S. Dak. . | 129,995 |
| Mich . . . | 1,626,229 | Nebr . . . | 318,000 | Conn. . . | 127,920 |
| Wis. . . . | 1,612,171 | Kans. . . | 309,833 | Wash . . | 120,890 |
| Mo . . . . | 1,504,055 | W. Va. . | 281,794 | Mont. . . | 90,541 |
| Ohio . . . | 1,016,966 | Tenn. . . | 215,024 | Ark. . . . | 69,856 |
| Minn. . . | 828,000 | N. H . . . | 210,196 | Oreg. . . | 66,652 |
| Ill . . . . . | 827,625 | Ky. . . . . | 207,080 | Idaho . . | 53,992 |
| Me . . . . | 643,189 | Md . . . . | 200,961 | Cal . . . . | 46,661 |

TIMOTHY AND CLOVER MIXED (Continued)

| STATE | CENSUS 1909 |
|---|---|
| Colo . . . | 45,001 |
| N. C. . . | 44,467 |
| N. Dak. | 34,068 |
| Del . . . . | 26,776 |
| R. I . . . . | 22,046 |
| Nev. . . . | 17,141 |
| Utah . . . | 11,508 |
| Wyo . . . | 8,066 |
| Okla . . . | 6,935 |
| Ala. . . . . | 3,706 |
| Ga. . . . . | 3,560 |
| La. . . . . | 2,678 |
| Miss . . . | 2,353 |
| N. Mex. | 1,881 |
| Fla. . . . . | 1,382 |
| Tex. . . . . | 306 |
| S. C. . . . | 177 |
| Ariz. . . . | 143 |
| East . . . | 13,428,745 |
| West. . . | 6,113,637 |
| U.S. . . . | 19,542,382 |

Compare with maps of receipts from sale of dairy products (map 70).


MAP 29
WILD, SALT, OR PRAIRIE GRASSES ACREAGE, 1909
EACH DOT REPRESENTS 2,000 ACRES
ACTUAL AREA COVERED BY THE DOT IS 9 TIMES AS GREAT AS THE CROP AREA IT REPRESENTS

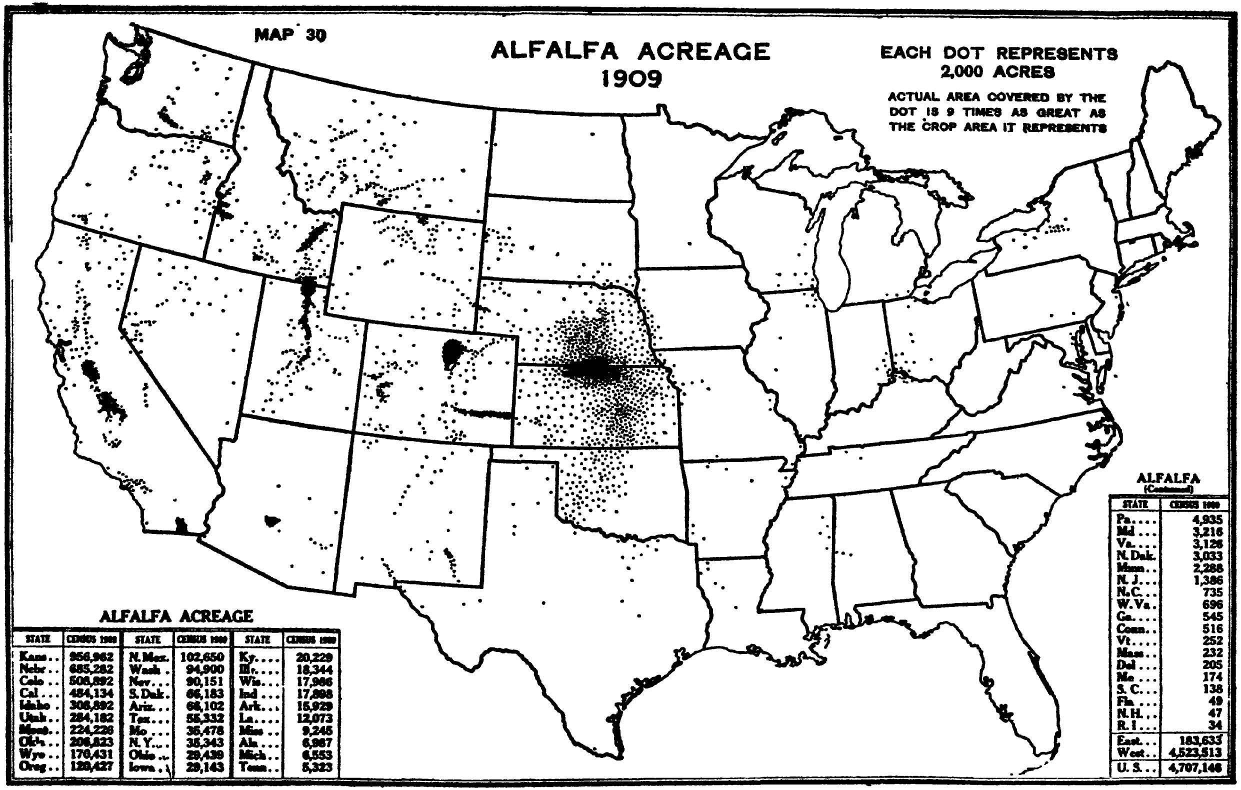
WILD, SALT, OR PRAIRIE GRASSES ACREAGE

| STATE | CENSUS 1909 | STATE | CENSUS 1909 | STATE | CENSUS 1909 |
|---|---|---|---|---|---|
| Nebr... | 3,063,319 | Cal... | 253,127 | N. Y... | 62,577 |
| S. Dak. | 2,913,676 | Wyo... | 242,706 | Ind... | 60,859 |
| N. Dak. | 2,383,694 | Tex... | 235,586 | Miss... | 55,490 |
| Minn... | 1,968,664 | Oreg... | 218,071 | N. C... | 44,791 |
| Kans... | 1,608,264 | Nev... | 197,716 | Mich... | 33,345 |
| Iowa... | 845,954 | Mo... | 142,922 | N. J... | 33,146 |
| Okla... | 695,176 | Idaho... | 120,361 | Tenn... | 28,489 |
| Mont... | 584,732 | Ill... | 112,978 | Wash... | 28,168 |
| Colo... | 384,799 | Ark... | 112,741 | N. Mex. | 28,023 |
| Wis... | 378,413 | Utah... | 87,883 | Ala... | 27,853 |

WILD, ETC., GRASSES
(Continued)

| STATE | CENSUS 1909 |
|---|---|
| Mass... | 25,290 |
| Me... | 24,557 |
| N. H... | 21,536 |
| La... | 21,275 |
| Ga... | 15,743 |
| Vt... | 13,951 |
| Conn... | 13,235 |
| Pa... | 12,569 |
| Del... | 10,397 |
| Ariz... | 9,514 |
| Fla... | 9,451 |
| Va... | 8,240 |
| Ky... | 7,193 |
| S. C... | 6,505 |
| W. Va.. | 5,495 |
| Md... | 4,169 |
| Ohio... | 2,471 |
| R. I... | 1,299 |
| East... | 1,020,151 |
| West... | 16,166,371 |
| U. S... | 17,186,522 |

Compare with maps of timothy (map 27), timothy and clover mixed (map 28), and alfalfa (map 30).


MAP 30
ALFALFA ACREAGE
1909
EACH DOT REPRESENTS
2,000 ACRES
ACTUAL AREA COVERED BY THE DOT IS 9 TIMES AS GREAT AS THE CROP AREA IT REPRESENTS

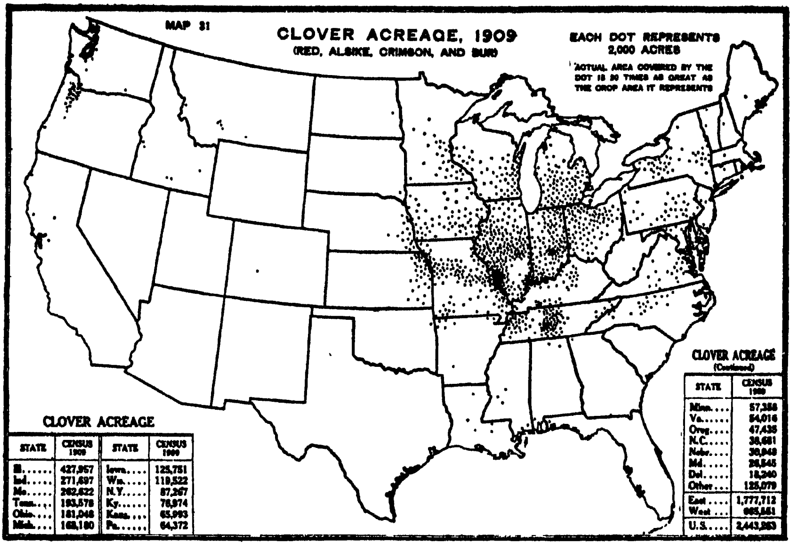
ALFALFA ACREAGE

| STATE | CENSUS 1909 | STATE | CENSUS 1909 | STATE | CENSUS 1909 |
|---|---|---|---|---|---|
| Kans. . | 956,962 | N. Mex. | 102,650 | Ky. . . . | 20,229 |
| Nebr. . | 685,282 | Wash. . | 94,900 | Ill. . . . | 18,344 |
| Colo. . | 506,892 | Nev. . . | 90,151 | Wis. . . | 17,966 |
| Cal. . . | 484,134 | S. Dak. | 66,183 | Ind. . . | 17,898 |
| Idaho . | 306,892 | Ariz. . . | 66,102 | Ark. . . | 15,929 |
| Utah . . | 284,182 | Tex. . . | 55,332 | La. . . . | 12,073 |
| Mont. . | 224,226 | Mo. . . | 36,478 | Miss. . | 9,245 |
| Okla. . | 206,823 | N. Y. . . | 35,343 | Ala. . . | 6,987 |
| Wyo. . | 170,431 | Ohio . . | 29,439 | Mich. . | 6,553 |
| Oreg. . | 128,427 | Iowa. . | 29,143 | Tenn. . | 5,323 |

ALFALFA
(Continued)

| STATE | CENSUS 1909 |
|---|---|
| Pa. . . . | 4,935 |
| Md. . . | 3,216 |
| Va. . . . | 3,126 |
| N. Dak. | 3,033 |
| Minn. . | 2,288 |
| N. J. . . | 1,386 |
| N. C. . . | 735 |
| W. Va. . | 696 |
| Ga. . . . | 545 |
| Conn. . | 516 |
| Vt. . . . | 252 |
| Mass. . | 232 |
| Del. . . | 205 |
| Me. . . | 174 |
| S. C. . . | 138 |
| Fla. . . | 49 |
| N. H. . . | 47 |
| R. I. . . | 34 |
| East. . . | 183,633 |
| West. . | 4,523,513 |
| U. S. . . | 4,707,146 |

Compare with maps of corn (map 13), wheat (map 19), and land in crops (map 5).


MAP 31
CLOVER ACREAGE, 1909
(RED, ALSIKE, CRIMSON, AND BUR)
EACH DOT REPRESENTS 2,000 ACRES
ACTUAL AREA COVERED BY THE DOT IS 30 TIMES AS GREAT AS THE CROP AREA IT REPRESENTS

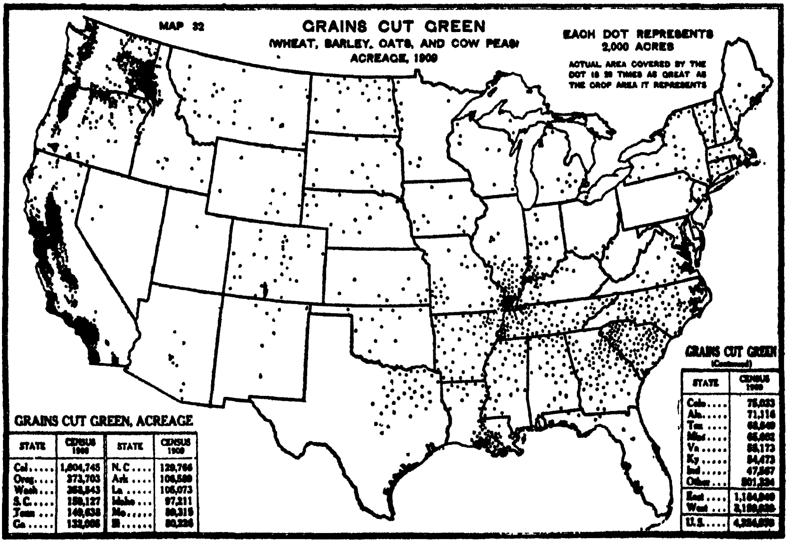
CLOVER ACREAGE

| STATE | CENSUS 1909 | STATE | CENSUS 1909 |
|---|---|---|---|
| Ill. . . . . . | 427,957 | Iowa. . . . | 125,751 |
| Ind. . . . . | 271,697 | Wis. . . . . | 119,522 |
| Mo. . . . . | 262,622 | N.Y. . . . . | 87,267 |
| Tenn. . . . | 193,578 | Ky. . . . . . | 76,974 |
| Ohio. . . . | 181,048 | Kans. . . . | 65,993 |
| Mich. . . . | 168,180 | Pa. . . . . . | 64,372 |

CLOVER ACREAGE
(Continued)

| STATE | CENSUS 1909 |
|---|---|
| Minn. . . . | 57,358 |
| Va. . . . . . | 54,016 |
| Oreg. . . . | 47,435 |
| N.C. . . . . | 38,681 |
| Nebr. . . . | 30,948 |
| Md. . . . . | 28,545 |
| Del. . . . . | 18,240 |
| Other . . . | 125,079 |
| East . . . . | 1,777,712 |
| West . . . | 665,551 |
| U.S. . . . . | 2,443,263 |

Compare with map of timothy and clover mixed (map 28).


MAP 32
GRAINS CUT GREEN
(WHEAT, BARLEY, OATS, AND COW PEAS)
ACREAGE, 1909
EACH DOT REPRESENTS 2,000 ACRES
ACTUAL AREA COVERED BY THE DOT IS 30 TIMES AS GREAT AS THE CROP AREA IT REPRESENTS

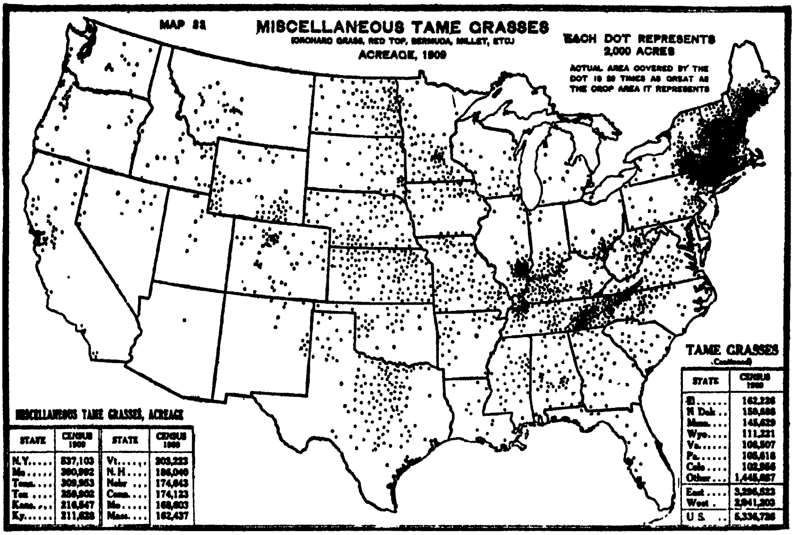
GRAINS CUT GREEN, ACREAGE

| STATE | CENSUS 1909 | STATE | CENSUS 1909 |
|---|---|---|---|
| Cal. . . . . | 1,804,745 | N. C . . . . | 129,766 |
| Oreg. . . . | 373,703 | Ark . . . . | 108,580 |
| Wash . . . | 363,543 | La . . . . . | 106,073 |
| S. C. . . . . | 158,127 | Idaho . . . | 97,211 |
| Tenn . . . | 140,638 | Mo. . . . . . | 89,315 |
| Ga . . . . . | 132,006 | Ill. . . . . . | 80,226 |

GRAINS CUT GREEN
(Continued)

| STATE | CENSUS 1909 |
|---|---|
| Colo. . . . | 75,033 |
| Ala. . . . . | 71,316 |
| Tex . . . . | 68,849 |
| Miss . . . . | 65,602 |
| Va . . . . . . | 55,173 |
| Ky . . . . . . | 54,473 |
| Ind . . . . . | 47,567 |
| Other . . . | 801,324 |
| East . . . . | 1,164,940 |
| West . . . | 3,159,938 |
| U.S. . . . . | 4,324,878 |

Compare with map of alfalfa (map 30).


MAP 33
MISCELLANEOUS TAME GRASSES
(ORCHARD GRASS, RED TOP, BERMUDA, MILLET, ETC.)
ACREAGE, 1909
EACH DOT REPRESENTS 2,000 ACRES
ACTUAL AREA COVERED BY THE DOT IS 20 TIMES AS GREAT AS THE CROP AREA IT REPRESENTS

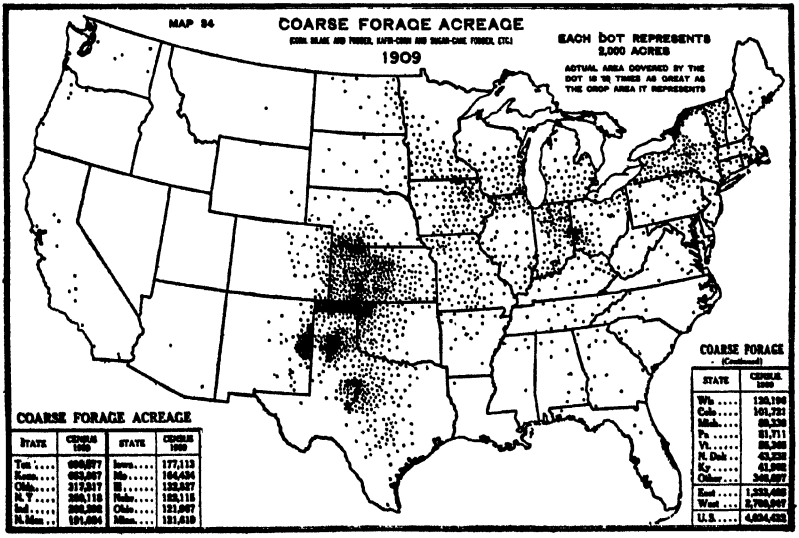
**MISCELLANEOUS TAME GRASSES, ACREAGE**

| STATE | CENSUS 1909 | STATE | CENSUS 1909 |
|---|---|---|---|
| N.Y. | 537,103 | Vt. | 303,223 |
| Me. | 390,962 | N.H. | 186,040 |
| Tenn. | 309,953 | Nebr | 174,843 |
| Tex | 259,902 | Conn. | 174,123 |
| Kans. | 216,547 | Mo. | 168,603 |
| Ky. | 211,628 | Mass. | 162,437 |

**TAME GRASSES**
(Continued)

| STATE | CENSUS 1909 |
|---|---|
| Ill. | 162,226 |
| N Dak. | 150,686 |
| Minn. | 145,629 |
| Wyo. | 111,221 |
| Va. | 108,507 |
| Pa. | 105,616 |
| Colo. | 102,966 |
| Other | 1,445,687 |
| East | 3,295,523 |
| West | 2,041,203 |
| U S. | 5,336,726 |

Compare with maps of timothy and clover mixed (map 28) and coarse forage (map 34).


MAP 34
COARSE FORAGE ACREAGE
(CORN SILAGE AND FODDER, KAFIR-CORN AND SUGAR-CANE FODDER, ETC.)
1909
EACH DOT REPRESENTS 2,000 ACRES
ACTUAL AREA COVERED BY THE DOT IS 20 TIMES AS GREAT AS THE CROP AREA IT REPRESENTS

**COARSE FORAGE ACREAGE**

| STATE | CENSUS 1909 | STATE | CENSUS 1909 |
|---|---|---|---|
| Tex. | 698,877 | Iowa | 177,113 |
| Kans. | 663,867 | Mo. | 164,434 |
| Okla. | 317,317 | Ill. | 132,827 |
| N.Y. | 268,118 | Nebr. | 128,115 |
| Ind. | 208,292 | Ohio | 121,967 |
| N.Mex. | 191,684 | Minn. | 121,619 |

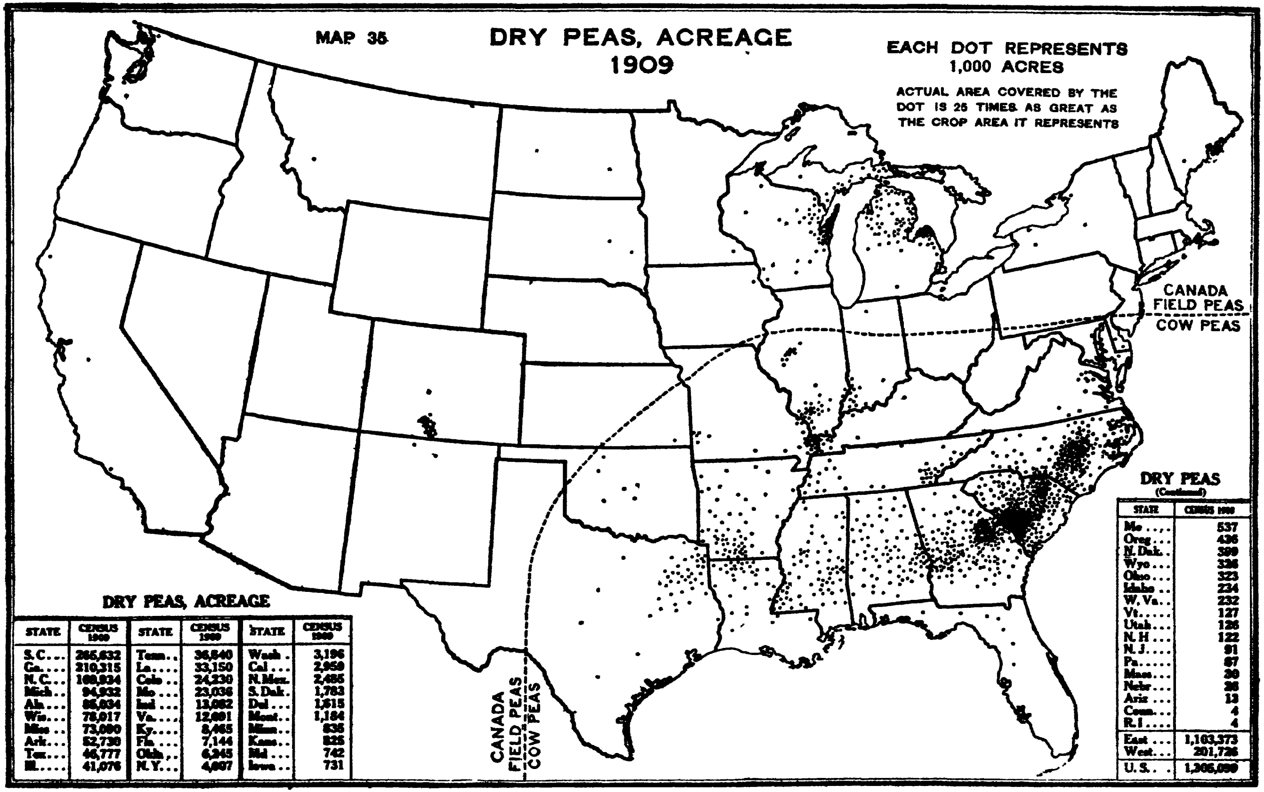
**COARSE FORAGE**
(Continued)

| STATE | CENSUS 1909 |
|---|---|
| Wis. | 120,196 |
| Colo. | 101,721 |
| Mich. | 89,330 |
| Pa. | 81,711 |
| Vt. | 56,368 |
| N. Dak. | 43,232 |
| Ky. | 41,962 |
| Other | 346,697 |
| East | 1,333,466 |
| West | 2,700,967 |
| U.S. | 4,034,433 |

Compare with maps of wild, salt, or prairie grasses (map 29) and alfalfa (map 30).

MAP 35

DRY PEAS, ACREAGE 1909


EACH DOT REPRESENTS 1,000 ACRES
ACTUAL AREA COVERED BY THE DOT IS 25 TIMES AS GREAT AS THE CROP AREA IT REPRESENTS
CANADA FIELD PEAS
COW PEAS
CANADA FIELD PEAS
COW PEAS

DRY PEAS, ACREAGE

| STATE | CENSUS 1909 | STATE | CENSUS 1909 | STATE | CENSUS 1909 |
|---|---|---|---|---|---|
| S. C. . . . | 265,632 | Tenn. . . | 36,840 | Wash . . | 3,196 |
| Ga. . . . . | 210,315 | La. . . . . | 33,150 | Cal . . . . | 2,959 |
| N. C. . . . | 168,934 | Colo . . . | 24,230 | N. Mex. | 2,485 |
| Mich . . . | 94,932 | Mo . . . . | 23,036 | S. Dak. . | 1,783 |
| Ala . . . . | 86,034 | Ind . . . . | 13,082 | Del . . . . | 1,615 |
| Wis. . . . | 78,017 | Va. . . . . | 12,601 | Mont. . . | 1,184 |
| Miss . . . | 73,090 | Ky. . . . . | 8,465 | Minn. . . | 835 |
| Ark. . . . | 52,738 | Fla. . . . . | 7,144 | Kans. . . | 825 |
| Tex. . . . | 46,777 | Okla. . . | 6,245 | Md . . . . | 742 |
| Ill. . . . . | 41,076 | N. Y. . . . | 4,807 | Iowa . . . | 731 |

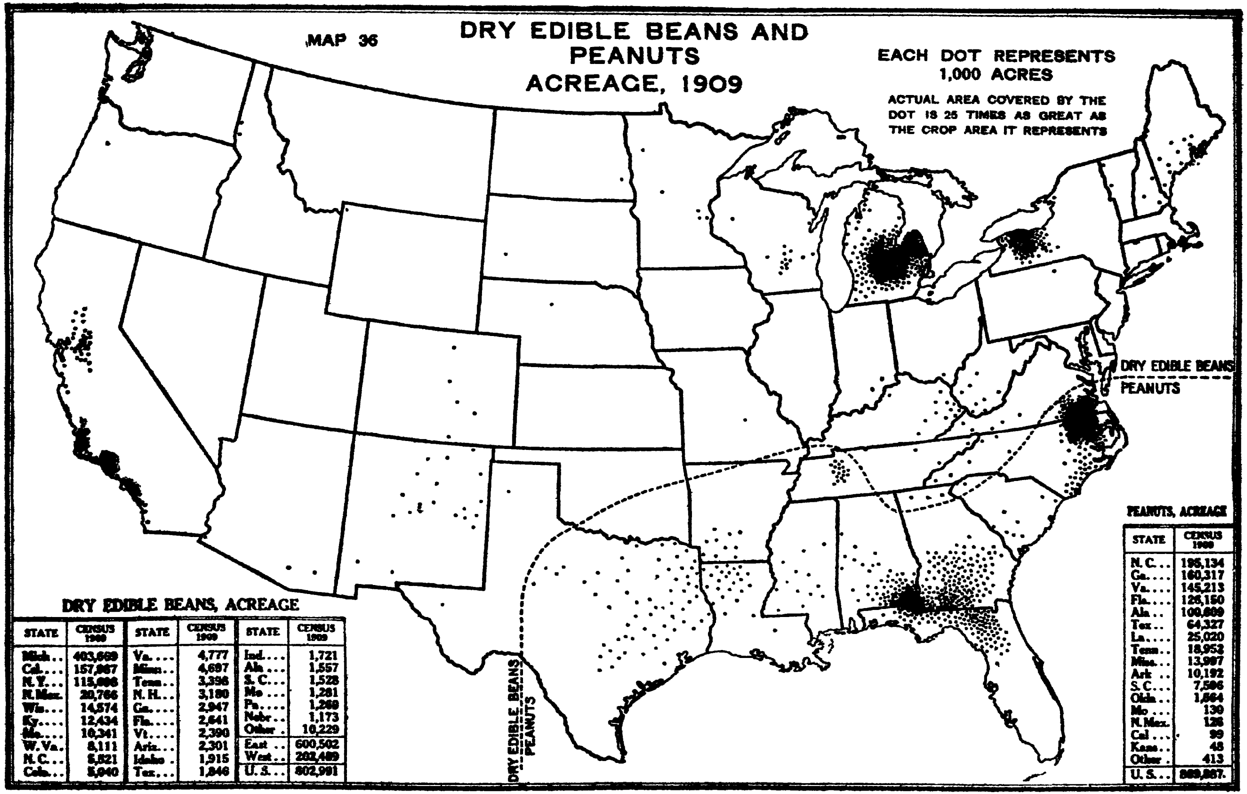
DRY PEAS (Continued)

| STATE | CENSUS 1909 |
|---|---|
| Me . . . . | 537 |
| Oreg . . . | 436 |
| N. Dak. . | 399 |
| Wyo . . . | 328 |
| Ohio . . . | 323 |
| Idaho . . | 234 |
| W. Va. . . | 232 |
| Vt. . . . . | 127 |
| Utah . . . | 126 |
| N. H . . . | 122 |
| N. J. . . . | 91 |
| Pa. . . . . | 87 |
| Mass . . . | 30 |
| Nebr . . . | 26 |
| Ariz . . . | 13 |
| Conn. . . | 4 |
| R. I . . . . | 4 |
| East . . . | 1,103,373 |
| West. . . | 201,726 |
| U. S. . . | 1,305,099 |

Compare Canada field peas with dry edible beans (map 36) and cow peas with peanuts (map 36).

MAP 36

DRY EDIBLE BEANS AND PEANUTS ACREAGE, 1909


EACH DOT REPRESENTS 1,000 ACRES
ACTUAL AREA COVERED BY THE DOT IS 25 TIMES AS GREAT AS THE CROP AREA IT REPRESENTS
DRY EDIBLE BEANS
PEANUTS
DRY EDIBLE BEANS
PEANUTS

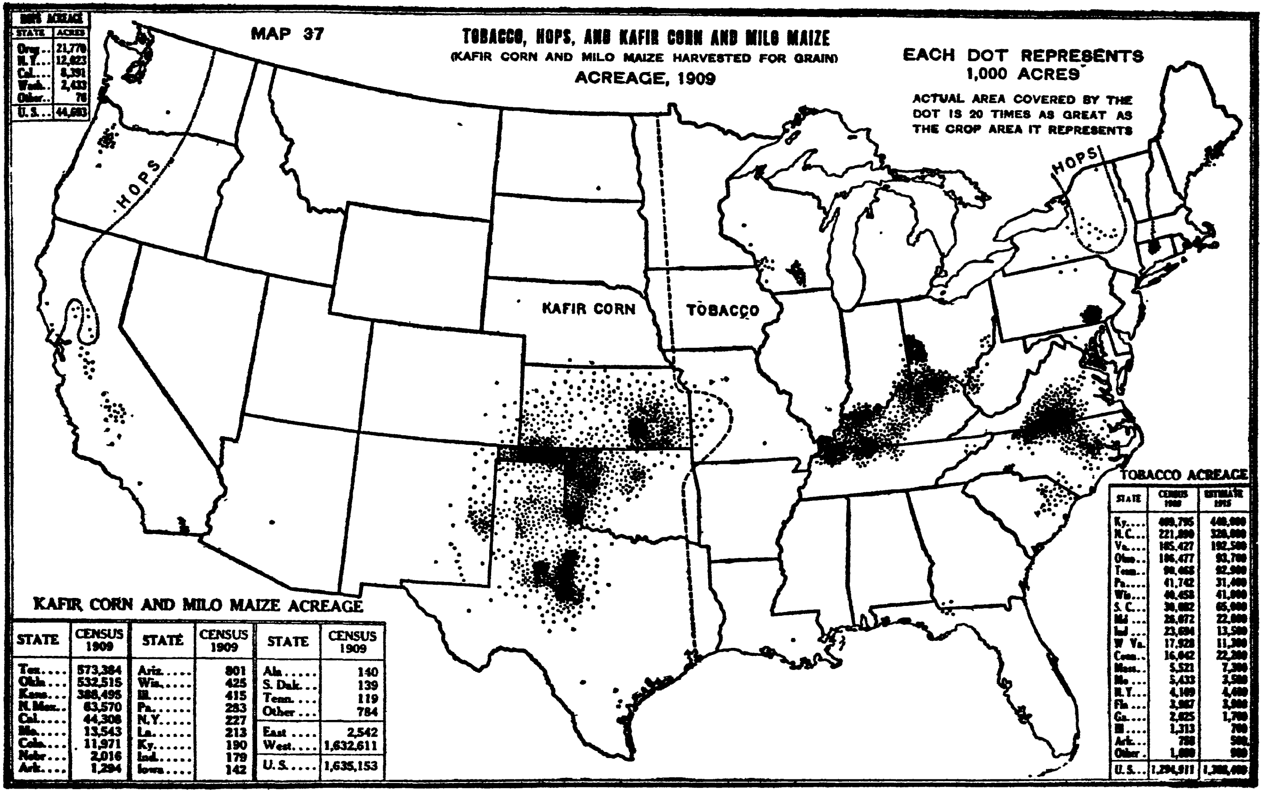
**DRY EDIBLE BEANS, ACREAGE**

| STATE | CENSUS 1909 | STATE | CENSUS 1909 | STATE | CENSUS 1909 |
|---|---|---|---|---|---|
| Mich. . . | 403,669 | Va. . . . | 4,777 | Ind. . . . | 1,721 |
| Cal. . . . | 157,867 | Minn. . . | 4,697 | Ala. . . . | 1,557 |
| N. Y. . . . | 115,006 | Tenn. . . | 3,396 | S. C. . . . | 1,528 |
| N. Mex. | 20,766 | N. H. . . | 3,180 | Mo . . . . | 1,281 |
| Wis. . . . | 14,574 | Ga. . . . | 2,947 | Pa. . . . . | 1,269 |
| Ky. . . . . | 12,434 | Fla. . . . | 2,641 | Nebr. . . | 1,173 |
| Me. . . . | 10,341 | Vt. . . . . | 2,390 | Other . | 10,229 |
| W. Va. . | 8,111 | Ariz. . . . | 2,301 | East . . | 600,502 |
| N. C. . . . | 5,821 | Idaho . | 1,915 | West . . | 202,489 |
| Colo. . . | 5,040 | Tex. . . . | 1,846 | U. S. . . | 802,991 |

**PEANUTS, ACREAGE**

| STATE | CENSUS 1909 |
|---|---|
| N. C. . . | 195,134 |
| Ga. . . . | 160,317 |
| Va. . . . | 145,213 |
| Fla. . . . | 126,150 |
| Ala. . . | 100,809 |
| Tex . . | 64,327 |
| La. . . . | 25,020 |
| Tenn. . . | 18,952 |
| Miss. . . | 13,997 |
| Ark . . | 10,192 |
| S. C. . . . | 7,506 |
| Okla. . . | 1,564 |
| Mo . . . | 130 |
| N. Mex. | 128 |
| Cal . . . | 99 |
| Kans. . . | 48 |
| Other . | 413 |
| U. S. . . | 869,887. |

Compare dry edible beans with sugar beets (map 38).


MAP 37
TOBACCO, HOPS, AND KAFIR CORN AND MILO MAIZE
(KAFIR CORN AND MILO MAIZE HARVESTED FOR GRAIN)
ACREAGE, 1909
EACH DOT REPRESENTS 1,000 ACRES
ACTUAL AREA COVERED BY THE DOT IS 20 TIMES AS GREAT AS THE CROP AREA IT REPRESENTS
HOPS
HOPS
KAFIR CORN
TOBACCO

HOPS ACREAGE

| STATE | ACRES |
|---|---|
| Oreg.... | 21,770 |
| N.Y.... | 12,023 |
| Cal.... | 8,391 |
| Wash.. | 2,433 |
| Other.. | 76 |
| U.S... | 44,693 |

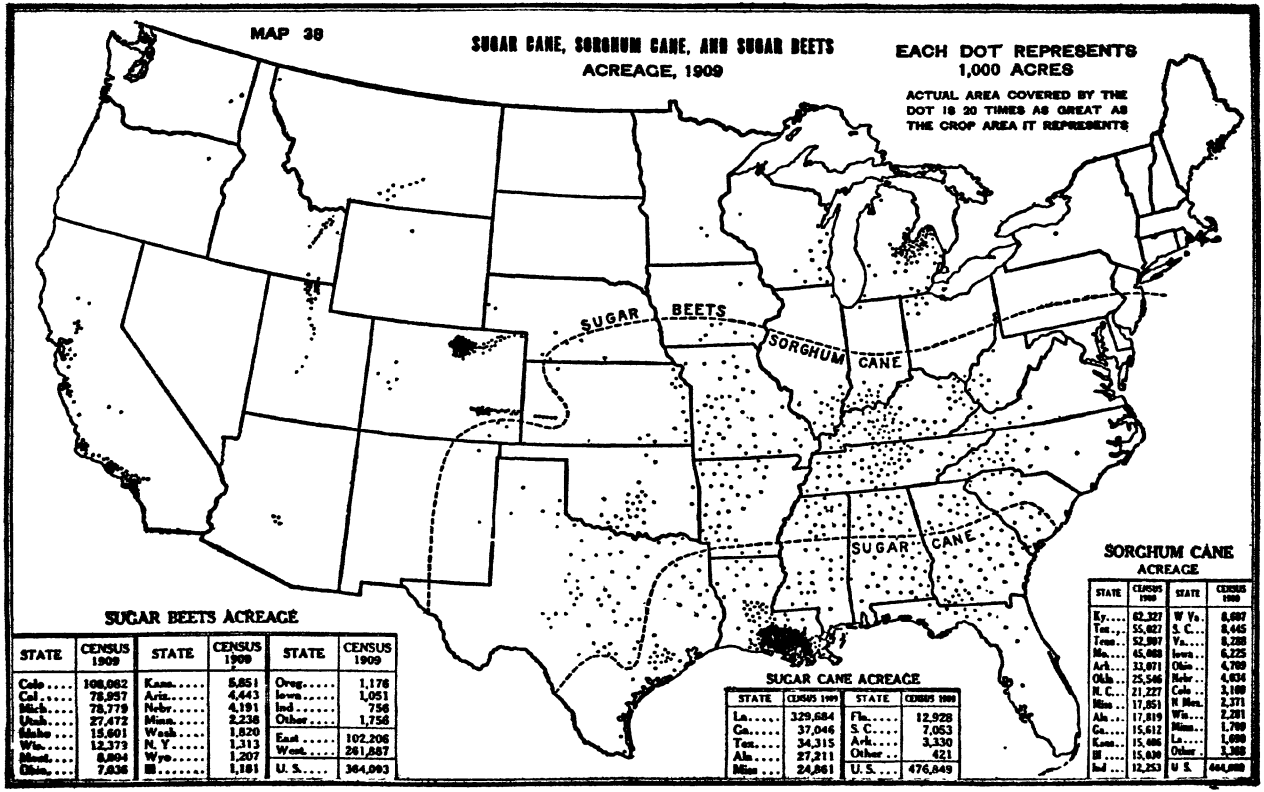
TOBACCO ACREAGE

| STATE | CENSUS 1909 | ESTIMATE 1915 |
|---|---|---|
| Ky.... | 469,795 | 440,000 |
| N.C.... | 221,880 | 320,000 |
| Va.... | 185,427 | 192,500 |
| Ohio.. | 106,477 | 93,700 |
| Tenn.. | 90,465 | 92,900 |
| Pa.... | 41,742 | 31,400 |
| Wis.... | 40,458 | 41,900 |
| S.C.... | 30,082 | 65,000 |
| Md.... | 26,072 | 22,000 |
| Ind.... | 23,684 | 13,500 |
| W. Va. | 17,928 | 11,300 |
| Conn.. | 16,042 | 22,200 |
| Mass.. | 5,521 | 7,300 |
| Mo.... | 5,433 | 3,500 |
| N.Y.... | 4,169 | 4,400 |
| Fla.... | 3,987 | 3,900 |
| Ga.... | 2,025 | 1,700 |
| Ill.... | 1,313 | 700 |
| Ark.... | 788 | 500 |
| Other. | 1,080 | 900 |
| U.S... | 1,294,911 | 1,368,400 |

KAFIR CORN AND MILO MAIZE ACREAGE

| STATE | CENSUS 1909 | STATE | CENSUS 1909 | STATE | CENSUS 1909 |
|---|---|---|---|---|---|
| Tex.... | 573,384 | Ariz..... | 801 | Ala..... | 140 |
| Okla... | 532,515 | Wis..... | 425 | S. Dak... | 139 |
| Kans... | 388,495 | Ill....... | 415 | Tenn.... | 119 |
| N. Mex.. | 63,570 | Pa....... | 283 | Other.... | 784 |
| Cal.... | 44,308 | N.Y...... | 227 | East.... | 2,542 |
| Mo..... | 13,543 | La...... | 213 | West.... | 1,632,611 |
| Colo... | 11,971 | Ky...... | 190 | U.S..... | 1,635,153 |
| Nebr... | 2,016 | Ind...... | 179 | | |
| Ark.... | 1,294 | Iowa.... | 142 | | |

Compare with map of corn (map 13).


MAP 38
SUGAR CANE, SORGHUM CANE, AND SUGAR BEETS
ACREAGE, 1909
EACH DOT REPRESENTS
1,000 ACRES
ACTUAL AREA COVERED BY THE DOT IS 20 TIMES AS GREAT AS THE CROP AREA IT REPRESENTS
SUGAR BEETS
SORGHUM CANE
SUGAR CANE

SUGAR BEETS ACREAGE

| STATE | CENSUS 1909 | STATE | CENSUS 1909 | STATE | CENSUS 1909 |
|---|---|---|---|---|---|
| Colo.... | 108,062 | Kans...... | 5,851 | Oreg...... | 1,176 |
| Cal...... | 78,957 | Ariz...... | 4,443 | Iowa...... | 1,051 |
| Mich.... | 78,779 | Nebr...... | 4,191 | Ind....... | 756 |
| Utah.... | 27,472 | Minn...... | 2,238 | Other.... | 1,756 |
| Idaho ... | 15,601 | Wash..... | 1,820 | East ..... | 102,206 |
| Wis..... | 12,373 | N. Y...... | 1,313 | West..... | 261,887 |
| Mont.... | 8,894 | Wyo...... | 1,207 | | |
| Ohio.... | 7,936 | Ill........ | 1,181 | U. S..... | 364,093 |

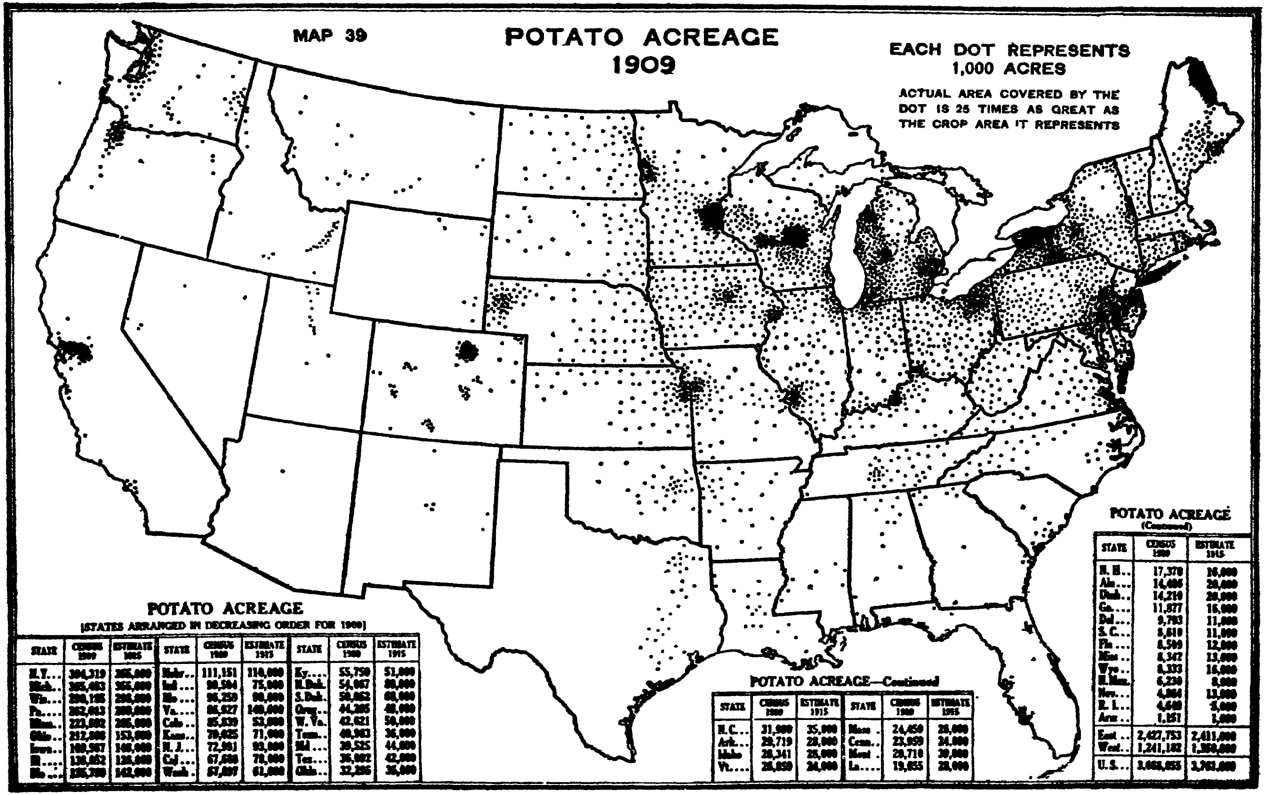
SUGAR CANE ACREAGE

| STATE | CENSUS 1909 | STATE | CENSUS 1909 |
|---|---|---|---|
| La...... | 329,684 | Fla...... | 12,928 |
| Ga...... | 37,046 | S. C..... | 7,053 |
| Tex..... | 34,315 | Ark..... | 3,330 |
| Ala..... | 27,211 | Other .. | 421 |
| Miss ... | 24,861 | U.S. ... | 476,849 |

SORGHUM CANE ACREAGE

| STATE | CENSUS 1909 | STATE | CENSUS 1909 |
|---|---|---|---|
| Ky..... | 62,327 | W Va.. | 8,607 |
| Tex.... | 55,827 | S. C... | 8,445 |
| Tenn.. | 52,907 | Va..... | 8,288 |
| Mo..... | 45,088 | Iowa .. | 6,225 |
| Ark.... | 33,071 | Ohio .. | 4,709 |
| Okla .. | 25,546 | Nebr .. | 4,634 |
| N. C... | 21,227 | Colo .. | 3,100 |
| Miss .. | 17,851 | N Mex. | 2,371 |
| Ala .... | 17,819 | Wis.... | 2,281 |
| Ga..... | 15,612 | Minn... | 1,709 |
| Kans... | 15,486 | La..... | 1,690 |
| Ill ..... | 15,030 | Other . | 3,388 |
| Ind .... | 12,253 | U S. | 444,088 |

Compare with maps of corn (map 13) and alfalfa (map 30).



MAP 39

POTATO ACREAGE
1909

EACH DOT REPRESENTS
1,000 ACRES

ACTUAL AREA COVERED BY THE DOT IS 25 TIMES AS GREAT AS THE CROP AREA IT REPRESENTS

POTATO ACREAGE

[STATES ARRANGED IN DECREASING ORDER FOR 1909]

| STATE | CENSUS 1909 | ESTIMATE 1915 | STATE | CENSUS 1909 | ESTIMATE 1915 | STATE | CENSUS 1909 | ESTIMATE 1915 |
|---|---|---|---|---|---|---|---|---|
| N. Y. | 394,319 | 385,000 | Nebr. | 111,151 | 110,000 | Ky. | 55,750 | 51,000 |
| Mich. | 365,683 | 365,000 | Ind. | 98,504 | 75,000 | N. Dak. | 54,067 | 80,000 |
| Wis. | 290,185 | 296,000 | Mo. | 96,250 | 90,000 | S. Dak. | 50,062 | 68,000 |
| Pa. | 282,013 | 280,000 | Va. | 86,927 | 140,000 | Oreg. | 44,205 | 48,000 |
| Minn. | 223,002 | 285,000 | Colo. | 85,339 | 53,000 | W. Va. | 42,621 | 50,000 |
| Ohio | 212,008 | 153,000 | Kans. | 79,625 | 71,000 | Tenn. | 40,983 | 36,000 |
| Iowa | 169,587 | 146,000 | N. J. | 72,981 | 93,000 | Md. | 39,525 | 44,000 |
| Ill. | 138,052 | 126,000 | Cal. | 67,688 | 78,000 | Tex. | 36,002 | 42,000 |
| Me. | 136,790 | 142,000 | Wash. | 57,897 | 61,000 | Okla. | 32,286 | 35,000 |

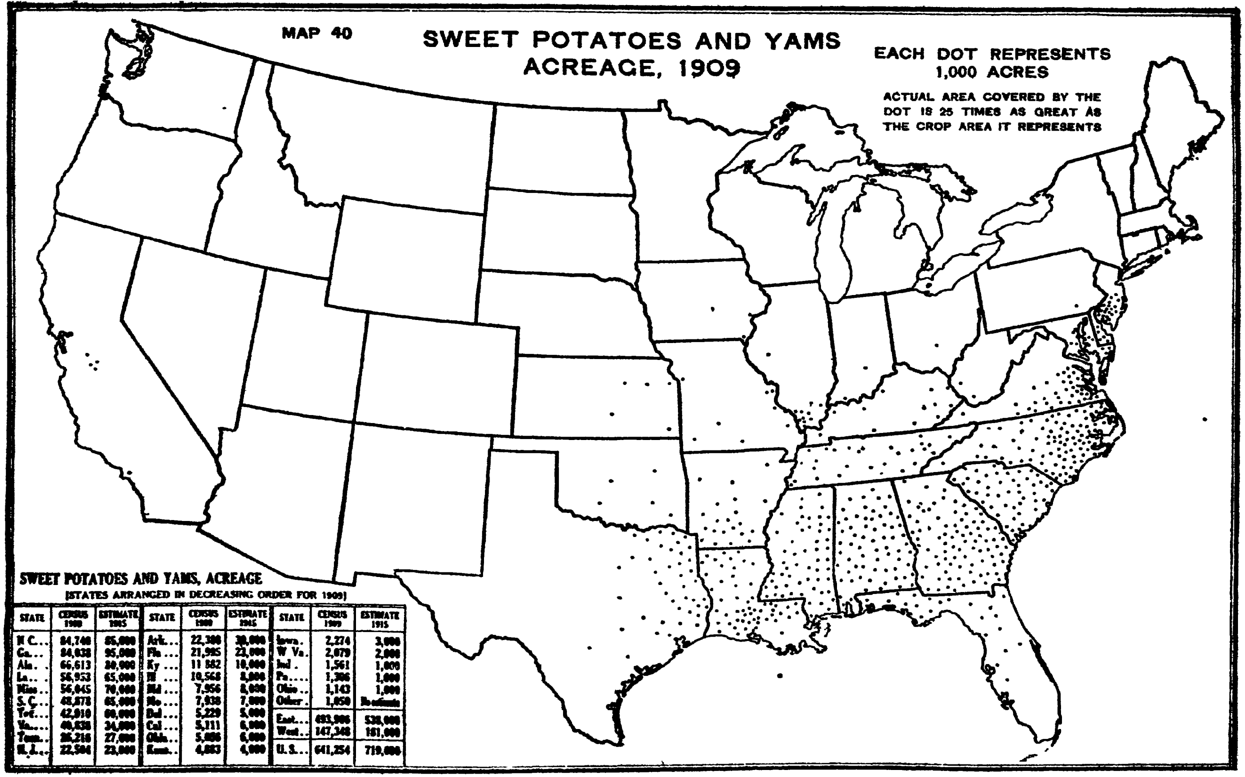
POTATO ACREAGE—Continued

| STATE | CENSUS 1909 | ESTIMATE 1915 | STATE | CENSUS 1909 | ESTIMATE 1915 |
|---|---|---|---|---|---|
| N. C. | 31,900 | 35,000 | Mass. | 24,450 | 28,000 |
| Ark. | 29,719 | 28,000 | Conn. | 23,959 | 24,000 |
| Idaho | 28,341 | 25,000 | Mont. | 20,718 | 30,000 |
| Vt. | 26,859 | 24,000 | La. | 19,655 | 23,000 |

POTATO ACREAGE
(Continued)

| STATE | CENSUS 1909 | ESTIMATE 1915 |
|---|---|---|
| N. H. | 17,370 | 18,000 |
| Ala. | 14,406 | 20,000 |
| Utah | 14,210 | 20,000 |
| Ga. | 11,877 | 16,000 |
| Del. | 9,783 | 11,000 |
| S. C. | 8,610 | 11,000 |
| Fla. | 8,509 | 12,000 |
| Miss. | 8,347 | 13,000 |
| Wyo. | 8,333 | 16,000 |
| N. Mex. | 6,230 | 8,000 |
| Nev. | 4,864 | 13,000 |
| R. I. | 4,640 | 5,000 |
| Ariz. | 1,151 | 1,000 |
| East | 2,427,753 | 2,411,000 |
| West | 1,241,182 | 1,350,000 |
| U. S. | 3,668,855 | 3,761,000 |

Compare with maps of total vegetables (map 41) and timothy and clover mixed (map 28).



MAP 40

SWEET POTATOES AND YAMS ACREAGE, 1909

EACH DOT REPRESENTS 1,000 ACRES

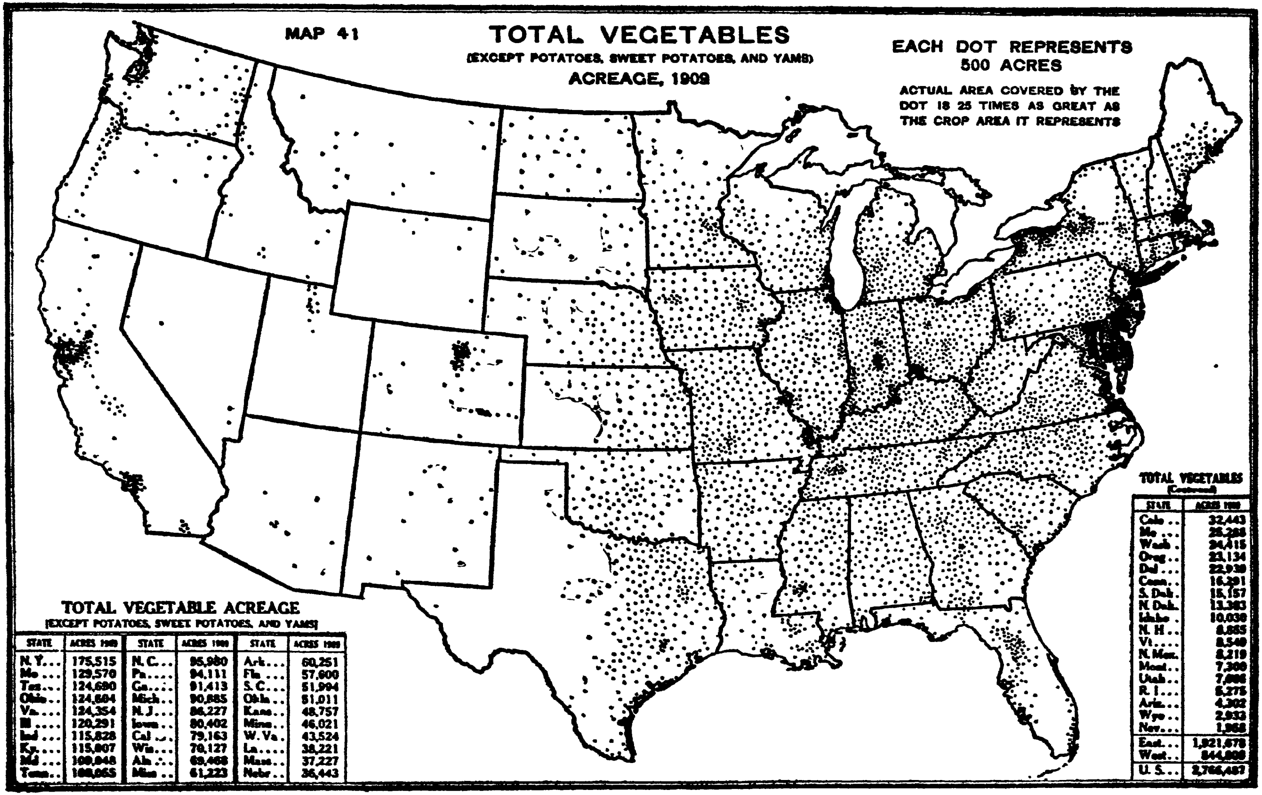
ACTUAL AREA COVERED BY THE DOT IS 25 TIMES AS GREAT AS THE CROP AREA IT REPRESENTS

**SWEET POTATOES AND YAMS, ACREAGE**

[STATES ARRANGED IN DECREASING ORDER FOR 1909]

| STATE | CENSUS 1909 | ESTIMATE 1915 | STATE | CENSUS 1909 | ESTIMATE 1915 | STATE | CENSUS 1909 | ESTIMATE 1915 |
|---|---|---|---|---|---|---|---|---|
| N. C. . . | 84,740 | 85,000 | Ark. . . | 22,300 | 30,000 | Iowa . | 2,274 | 3,000 |
| Ga. . . | 84,038 | 95,000 | Fla . . . | 21,985 | 23,000 | W. Va. | 2,079 | 2,000 |
| Ala. . . | 66,613 | 80,000 | Ky . . . | 11,882 | 10,000 | Ind . | 1,561 | 1,000 |
| La. . . | 56,953 | 65,000 | Ill . . . | 10,568 | 8,000 | Pa. . . . | 1,306 | 1,000 |
| Miss. . | 56,045 | 70,000 | Md . . . | 7,956 | 8,000 | Ohio . . | 1,143 | 1,000 |
| S. C. . . | 48,878 | 65,000 | Mo . . . | 7,938 | 7,000 | Other . | 1,050 | No estimate |
| Tex. . . | 42,010 | 60,000 | Del . . . | 5,229 | 5,000 | East. . . | 493,906 | 538,000 |
| Va. . . . | 40,838 | 34,000 | Cal . . . | 5,111 | 6,000 | West . . | 147,348 | 181,000 |
| Tenn. . | 26,216 | 27,000 | Okla. . . | 5,086 | 6,000 | | | |
| N. J. . . | 22,504 | 23,000 | Kans. . . | 4,883 | 4,000 | U. S. . . | 641,254 | 719,000 |

Compare with maps of potatoes (map 39) and cotton (map 15).



MAP 41

TOTAL VEGETABLES

(EXCEPT POTATOES, SWEET POTATOES, AND YAMS)

ACREAGE, 1909

EACH DOT REPRESENTS 500 ACRES

ACTUAL AREA COVERED BY THE DOT IS 25 TIMES AS GREAT AS THE CROP AREA IT REPRESENTS

TOTAL VEGETABLE ACREAGE

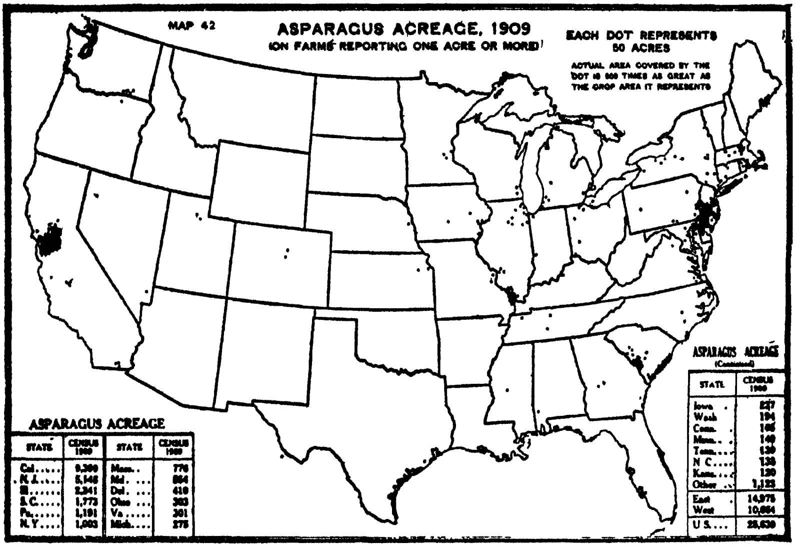
[EXCEPT POTATOES, SWEET POTATOES, AND YAMS]

| STATE | ACRES 1909 | STATE | ACRES 1909 | STATE | ACRES 1909 |
|---|---|---|---|---|---|
| N. Y. . . | 175,515 | N. C. . . | 95,980 | Ark. . . | 60,251 |
| Mo . . . | 129,570 | Pa. . . . | 94,111 | Fla. . . | 57,600 |
| Tex. . . | 124,690 | Ga. . . | 91,413 | S. C. . . | 51,994 |
| Ohio . . | 124,684 | Mich. . . | 90,885 | Okla. . . | 51,011 |
| Va. . . . | 124,354 | N. J. . . | 86,227 | Kans. . . | 48,757 |
| Ill. . . . | 120,291 | Iowa . . | 80,402 | Minn. . . | 46,021 |
| Ind . . . | 115,828 | Cal . . | 79,163 | W. Va. . | 43,524 |
| Ky. . . . | 115,807 | Wis. . . | 70,127 | La. . . . | 38,221 |
| Md . . . | 109,848 | Ala . . | 69,468 | Mass. . . | 37,227 |
| Tenn. . | 108,065 | Miss . . | 61,223 | Nebr . . | 36,443 |

TOTAL VEGETABLES (Continued)

| STATE | ACRES 1909 |
|---|---|
| Colo . . | 32,443 |
| Me . . . | 25,288 |
| Wash . | 24,415 |
| Oreg . . | 23,134 |
| Del . . . | 22,939 |
| Conn. . . | 16,291 |
| S. Dak. . | 15,157 |
| N. Dak. | 13,383 |
| Idaho . | 10,030 |
| N. H. . . | 8,855 |
| Vt. . . . | 8,540 |
| N. Mex. | 8,219 |
| Mont. . | 7,300 |
| Utah . . | 7,086 |
| R. I. . . | 5,275 |
| Ariz. . . | 4,302 |
| Wyo . . | 2,933 |
| Nev. . . | 1,868 |
| East . . | 1,921,678 |
| West . . | 844,809 |
| U. S. . . | 2,766,487 |

Compare with locations of large cities on State identification map (map 2).

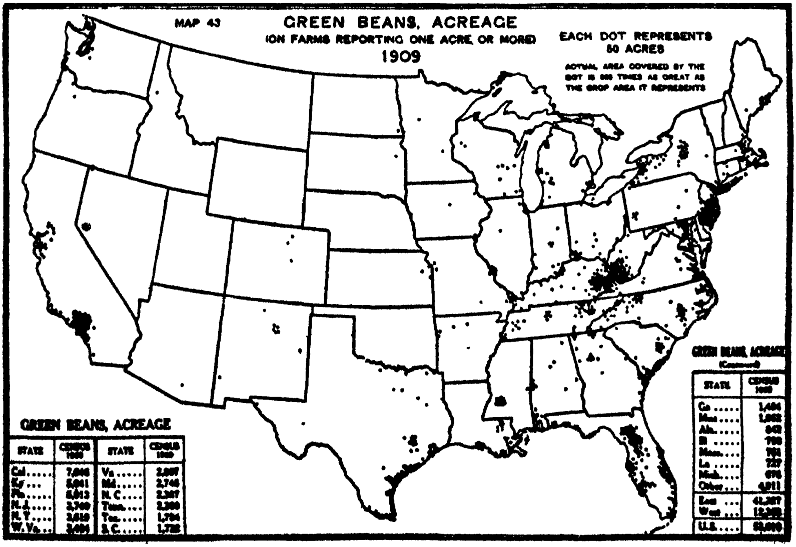

MAP 42
ASPARAGUS ACREAGE, 1909
(ON FARMS REPORTING ONE ACRE OR MORE)
EACH DOT REPRESENTS 50 ACRES
ACTUAL AREA COVERED BY THE DOT IS 800 TIMES AS GREAT AS THE CROP AREA IT REPRESENTS

ASPARAGUS ACREAGE

| STATE | CENSUS 1909 | STATE | CENSUS 1909 |
|---|---|---|---|
| Cal. | 9,309 | Mass. | 776 |
| N.J. | 5,146 | Md. | 564 |
| Ill. | 2,341 | Del. | 410 |
| S.C. | 1,773 | Ohio | 303 |
| Pa. | 1,191 | Va. | 301 |
| N.Y. | 1,003 | Mich. | 275 |

ASPARAGUS ACREAGE (Continued)

| STATE | CENSUS 1909 |
|---|---|
| Iowa | 227 |
| Wash | 194 |
| Conn. | 166 |
| Minn. | 149 |
| Tenn. | 139 |
| N.C. | 138 |
| Kans. | 130 |
| Other | 1,123 |
| East | 14,975 |
| West | 10,664 |
| U.S. | 25,639 |

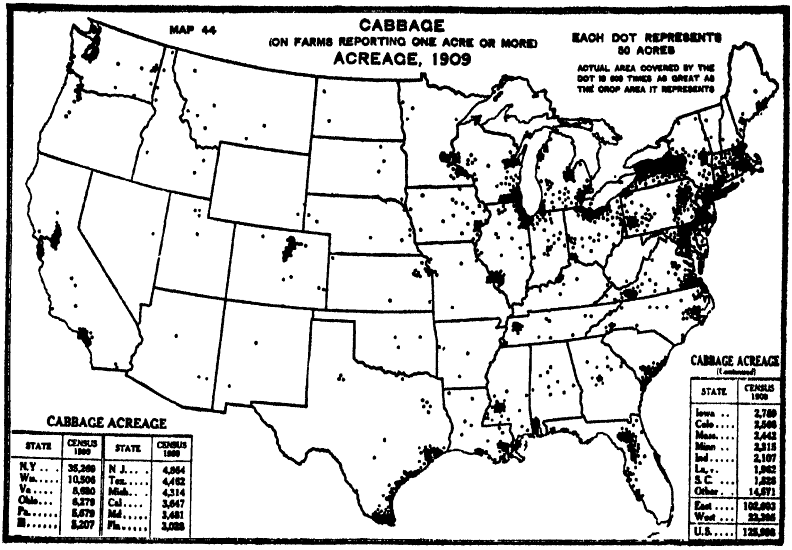

MAP 43
GREEN BEANS, ACREAGE
(ON FARMS REPORTING ONE ACRE OR MORE)
1909
EACH DOT REPRESENTS 50 ACRES
ACTUAL AREA COVERED BY THE DOT IS 800 TIMES AS GREAT AS THE CROP AREA IT REPRESENTS

GREEN BEANS, ACREAGE

| STATE | CENSUS 1909 | STATE | CENSUS 1909 |
|---|---|---|---|
| Cal. | 7,046 | Va. | 2,957 |
| Ky. | 5,961 | Md. | 2,746 |
| Fla. | 5,013 | N.C. | 2,367 |
| N.J. | 3,760 | Tenn. | 2,300 |
| N.Y. | 3,619 | Tex. | 1,794 |
| W.Va. | 3,484 | S.C. | 1,732 |

GREEN BEANS, ACREAGE (Continued)

| STATE | CENSUS 1909 |
|---|---|
| Ga. | 1,484 |
| Miss. | 1,362 |
| Ala. | 842 |
| Ill. | 708 |
| Mass. | 781 |
| La. | 727 |
| Mich. | 676 |
| Other | 4,611 |
| East | 41,387 |
| West | 12,309 |
| U.S. | 53,696 |

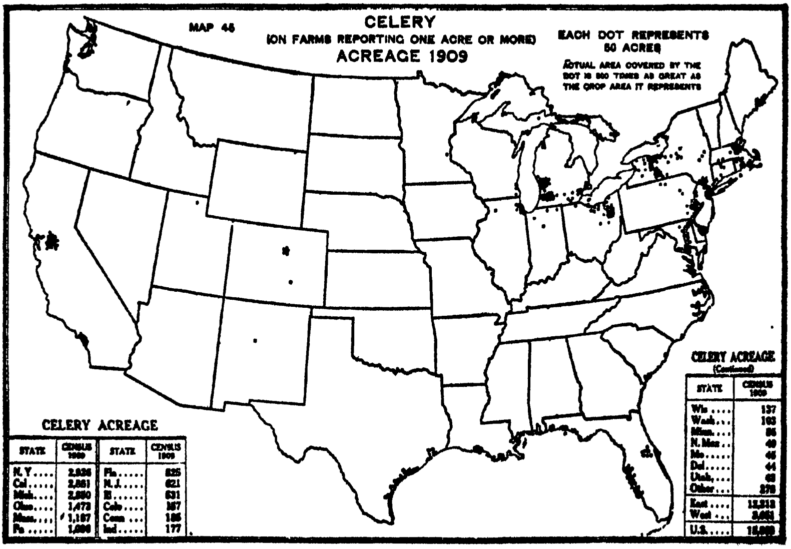

MAP 44
CABBAGE
(ON FARMS REPORTING ONE ACRE OR MORE)
ACREAGE, 1909
EACH DOT REPRESENTS 50 ACRES
ACTUAL AREA COVERED BY THE DOT IS 800 TIMES AS GREAT AS THE CROP AREA IT REPRESENTS

CABBAGE ACREAGE

| STATE | CENSUS 1909 | STATE | CENSUS 1909 |
|---|---|---|---|
| N.Y. . . | 35,269 | N.J. . . . | 4,864 |
| Wis. . . . . | 10,506 | Tex. . . . | 4,462 |
| Va. . . . | 8,980 | Mich. . . | 4,314 |
| Ohio . . . | 6,279 | Cal. . . . | 3,647 |
| Pa. . . . . . | 5,679 | Md. . . . . | 3,481 |
| Ill. . . . . . | 5,207 | Fla. . . . . | 3,038 |

CABBAGE ACREAGE (Continued)

| STATE | CENSUS 1909 |
|---|---|
| Iowa . . | 2,769 |
| Colo . . . . | 2,568 |
| Mass. . . . | 2,442 |
| Minn . . | 2,315 |
| Ind . . . . . | 2,107 |
| La. . . | 1,962 |
| S.C. . . . | 1,828 |
| Other . . | 14,871 |
| East . . . . | 102,603 |
| West . . . | 23,305 |
| U.S. . . . . | 125,908 |

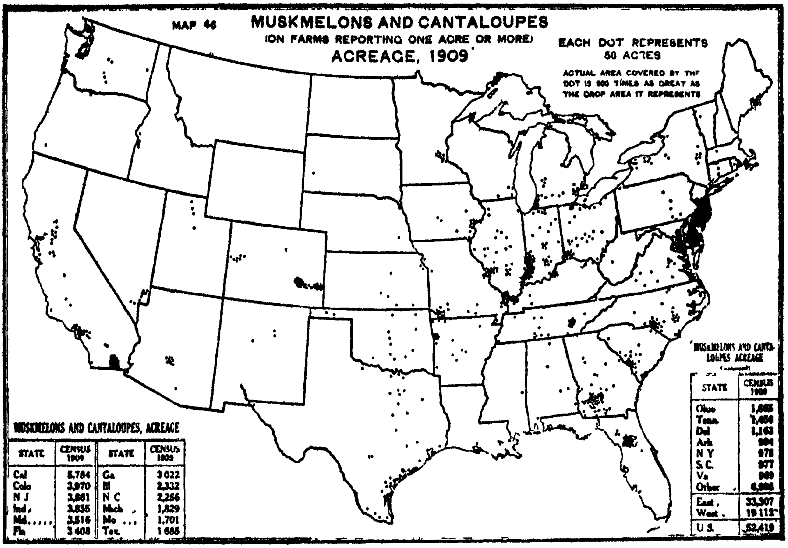

MAP 45
CELERY
(ON FARMS REPORTING ONE ACRE OR MORE)
ACREAGE 1909
EACH DOT REPRESENTS 50 ACRES
ACTUAL AREA COVERED BY THE DOT IS 800 TIMES AS GREAT AS THE CROP AREA IT REPRESENTS

CELERY ACREAGE

| STATE | CENSUS 1909 | STATE | CENSUS 1909 |
|---|---|---|---|
| N.Y. . . . . | 2,926 | Fla. . . . . . | 825 |
| Cal. . . . . | 2,881 | N.J. . . . . . | 621 |
| Mich. . . . | 2,860 | Ill. . . . . . . | 631 |
| Ohio . . . . | 1,473 | Colo . . . . | 167 |
| Mass. . . . | 1,167 | Conn . . . | 185 |
| Pa . . . . . . | 1,096 | Ind . . . . . | 177 |

CELERY ACREAGE (Continued)

| STATE | CENSUS 1909 |
|---|---|
| Wis . . . . | 137 |
| Wash . . . | 103 |
| Minn. . . . | 86 |
| N. Mex . . | 48 |
| Mo . . . . . | 46 |
| Del . . . . . | 44 |
| Utah . . . . | 43 |
| Other . . . | 376 |
| East . . . . | 12,212 |
| West . . . | 3,661 |
| U.S. . . . . | 15,873 |

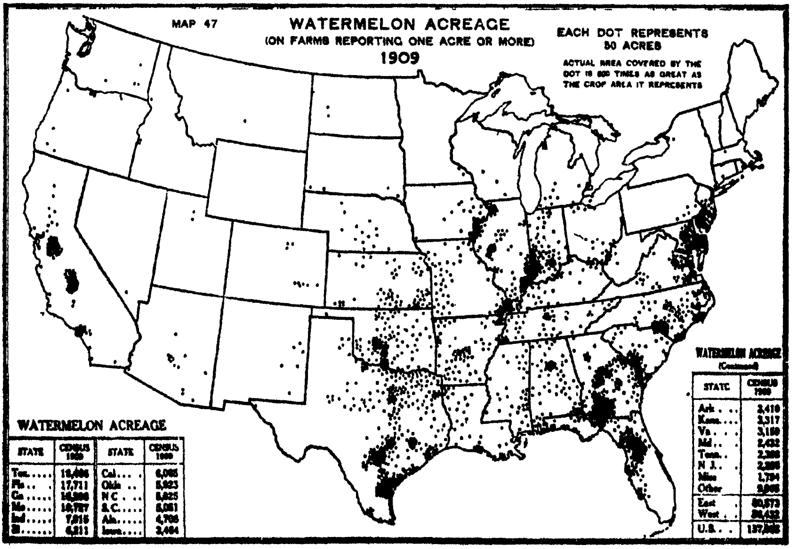

MAP 46
MUSKMELONS AND CANTALOUPES
(ON FARMS REPORTING ONE ACRE OR MORE)
ACREAGE, 1909
EACH DOT REPRESENTS 50 ACRES
ACTUAL AREA COVERED BY THE DOT IS 800 TIMES AS GREAT AS THE CROP AREA IT REPRESENTS

MUSKMELONS AND CANTALOUPES, ACREAGE

| STATE | CENSUS 1909 | STATE | CENSUS 1909 |
|---|---|---|---|
| Cal | 5,784 | Ga | 3 022 |
| Colo | 3,970 | Ill | 2,332 |
| N J | 3,861 | N C | 2,256 |
| Ind. | 3,855 | Mich | 1,829 |
| Md. | 3,516 | Mo | 1,701 |
| Fla | 3 408 | Tex. | 1 686 |

MUSKMELONS AND CANTALOUPES ACREAGE (continued)

| STATE | CENSUS 1909 |
|---|---|
| Ohio | 1,665 |
| Tenn. | 1,456 |
| Del | 1,163 |
| Ark | 994 |
| N Y | 978 |
| S.C. | 977 |
| Va | 969 |
| Other | 6,986 |
| East | 33,307 |
| West | 19 112 |
| U S. | 52,419 |

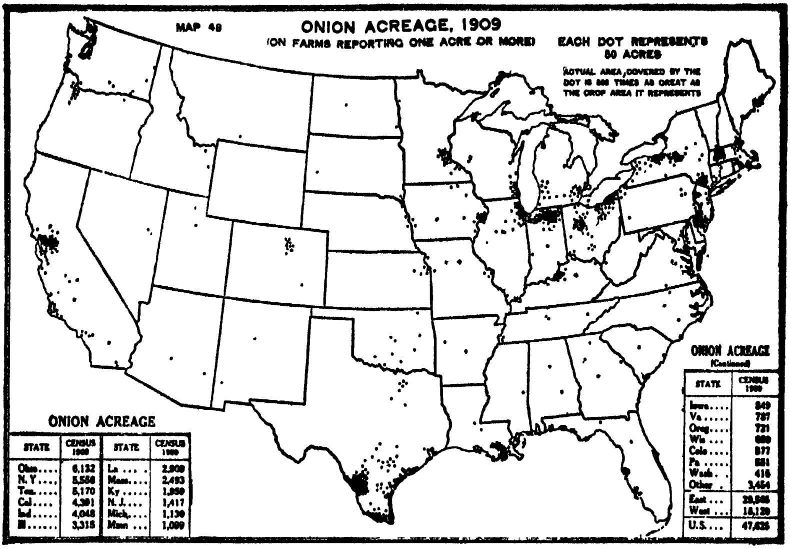

MAP 47
WATERMELON ACREAGE
(ON FARMS REPORTING ONE ACRE OR MORE)
1909
EACH DOT REPRESENTS 50 ACRES
ACTUAL AREA COVERED BY THE DOT IS 800 TIMES AS GREAT AS THE CROP AREA IT REPRESENTS

WATERMELON ACREAGE

| STATE | CENSUS 1909 | STATE | CENSUS 1909 |
|---|---|---|---|
| Tex. | 19,606 | Cal. | 6,085 |
| Fla. | 17,711 | Okla. | 5,923 |
| Ga. | 16,986 | N C | 5,825 |
| Mo. | 10,787 | S.C. | 5,061 |
| Ind. | 7,816 | Ala. | 4,708 |
| Ill. | 6,211 | Iowa | 3,464 |

WATERMELON ACREAGE (Continued)

| STATE | CENSUS 1909 |
|---|---|
| Ark. | 3,410 |
| Kans. | 3,317 |
| Va. | 3,160 |
| Md. | 2,432 |
| Tenn. | 2,388 |
| N. J. | 2,385 |
| Miss | 1,794 |
| Other | 3,966 |
| East | 80,573 |
| West | 56,432 |
| U.S. | 137,005 |

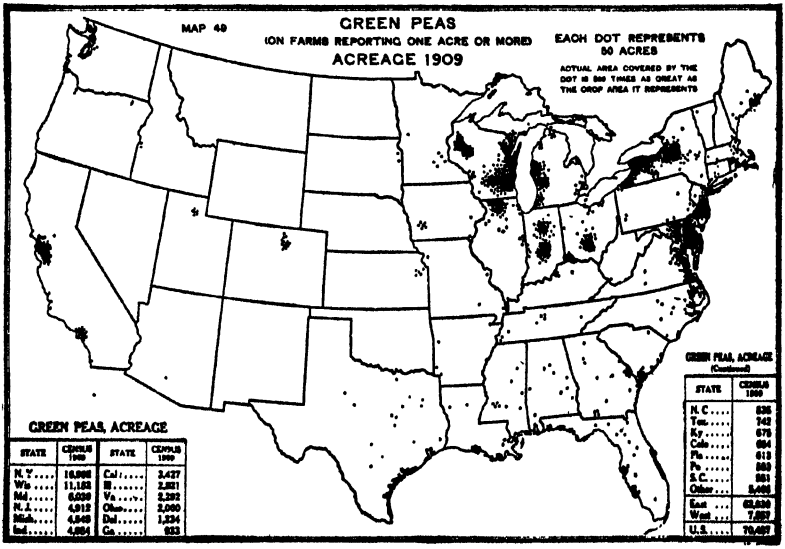

MAP 48
ONION ACREAGE, 1909
(ON FARMS REPORTING ONE ACRE OR MORE)
EACH DOT REPRESENTS 50 ACRES
ACTUAL AREA, COVERED BY THE DOT IS 800 TIMES AS GREAT AS THE CROP AREA IT REPRESENTS

ONION ACREAGE

| STATE | CENSUS 1909 | STATE | CENSUS 1909 |
|---|---|---|---|
| Ohio.... | 6,132 | La .... | 2,909 |
| N. Y.... | 5,558 | Mass.... | 2,493 |
| Tex.... | 5,170 | Ky..... | 1,959 |
| Cal.... | 4,391 | N. J.... | 1,417 |
| Ind..... | 4,048 | Mich.... | 1,139 |
| Ill...... | 3,315 | Minn ... | 1,099 |

ONION ACREAGE (Continued)

| STATE | CENSUS 1909 |
|---|---|
| Iowa.... | 849 |
| Va..... | 787 |
| Oreg.... | 721 |
| Wis ... | 690 |
| Colo.... | 577 |
| Pa ..... | 551 |
| Wash . . | 416 |
| Other . | 3,454 |
| East ... | 29,505 |
| West ... | 18,120 |
| U.S. ... | 47,625 |

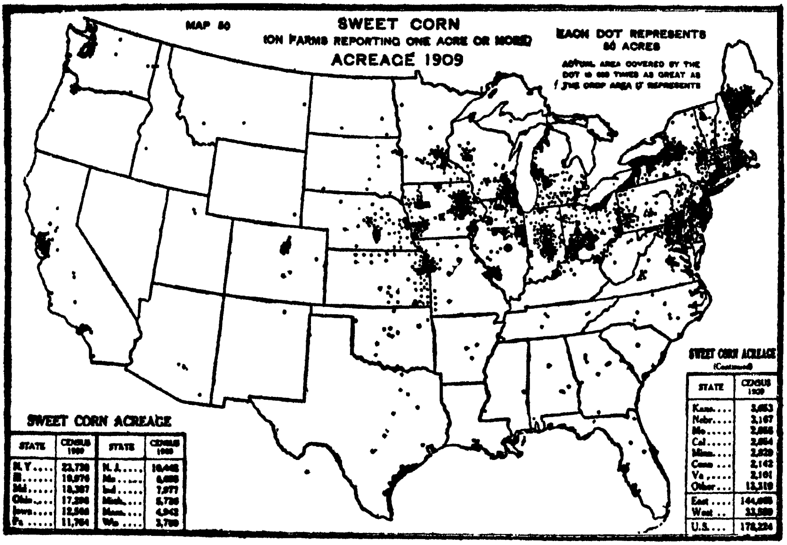

MAP 49
GREEN PEAS
(ON FARMS REPORTING ONE ACRE OR MORE)
ACREAGE 1909
EACH DOT REPRESENTS 50 ACRES
ACTUAL AREA COVERED BY THE DOT IS 800 TIMES AS GREAT AS THE CROP AREA IT REPRESENTS

GREEN PEAS, ACREAGE

| STATE | CENSUS 1909 | STATE | CENSUS 1909 |
|---|---|---|---|
| N. Y.... | 16,998 | Cal..... | 3,427 |
| Wis .... | 11,182 | Ill...... | 2,821 |
| Md..... | 6,039 | Va...... | 2,292 |
| N. J.... | 4,912 | Ohio.... | 2,060 |
| Mich.... | 4,848 | Del..... | 1,234 |
| Ind..... | 4,064 | Ga..... | 933 |

GREEN PEAS, ACREAGE (Continued)

| STATE | CENSUS 1909 |
|---|---|
| N. C.... | 836 |
| Tex.... | 742 |
| Ky..... | 675 |
| Colo.... | 664 |
| Fla..... | 613 |
| Pa ..... | 580 |
| S. C.... | 551 |
| Other... | 5,466 |
| East ... | 62,630 |
| West ... | 7,857 |
| U.S.... | 70,487 |

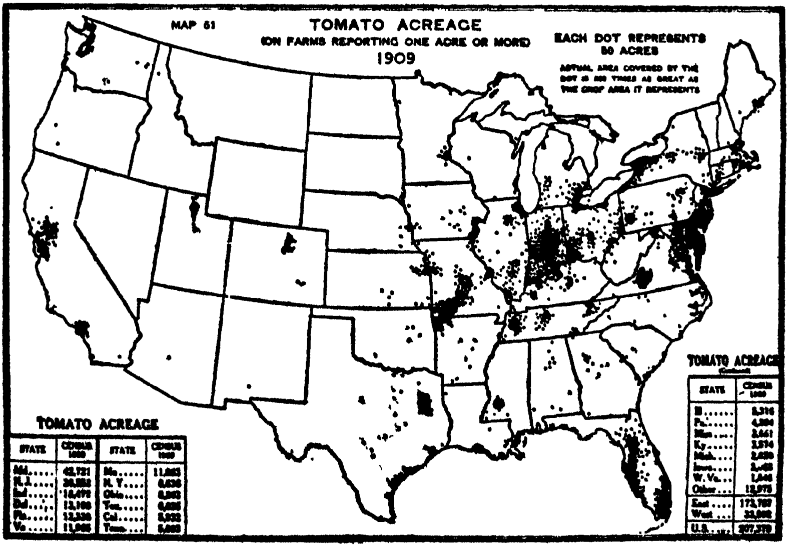

MAP 50
SWEET CORN
(ON FARMS REPORTING ONE ACRE OR MORE)
ACREAGE 1909
EACH DOT REPRESENTS 50 ACRES
ACTUAL AREA COVERED BY THE DOT IS 800 TIMES AS GREAT AS THE CROP AREA IT REPRESENTS

SWEET CORN ACREAGE

| STATE | CENSUS 1909 | STATE | CENSUS 1909 |
|---|---|---|---|
| N. Y. . . . . | 23,730 | N. J. . . . . | 10,442 |
| Ill. . . . . . | 19,976 | Me. . . . . . | 8,686 |
| Md. . . . . . | 18,367 | Ind. . . . . | 7,977 |
| Ohio . . . . | 17,296 | Mich. . . . | 5,736 |
| Iowa . . . . | 12,566 | Mass. . . . | 4,942 |
| Pa. . . . . . | 11,764 | Wis. . . . . | 3,700 |

SWEET CORN ACREAGE (Continued)

| STATE | CENSUS 1909 |
|---|---|
| Kans. . . . | 3,053 |
| Nebr. . . . | 3,167 |
| Mo. . . . . | 2,866 |
| Cal. . . . . | 2,864 |
| Minn. . . . | 2,829 |
| Conn. . . . | 2,142 |
| Va. . . . . | 2,101 |
| Other . . . | 13,319 |
| East . . . . | 144,695 |
| West . . | 33,589 |
| U.S. . . . | 178,224 |

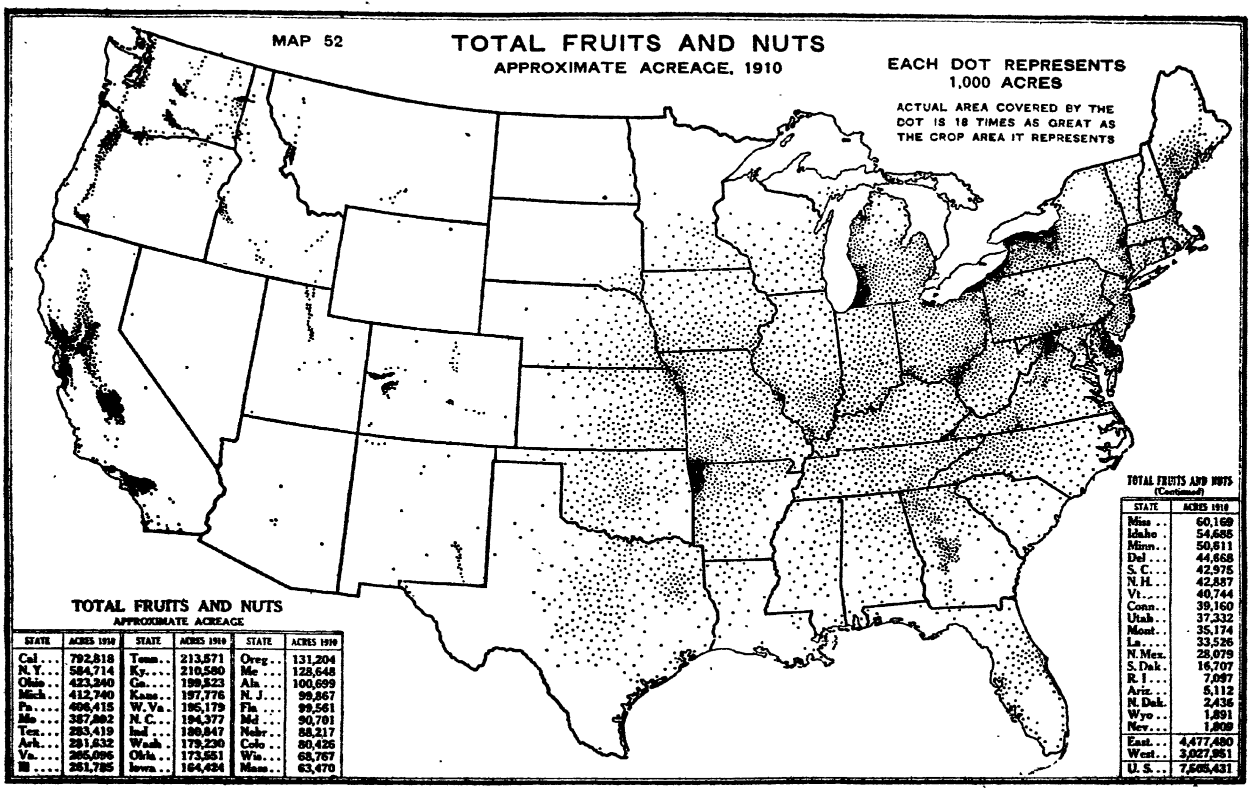

MAP 61
TOMATO ACREAGE
(ON FARMS REPORTING ONE ACRE OR MORE)
1909
EACH DOT REPRESENTS 50 ACRES
ACTUAL AREA COVERED BY THE DOT IS 800 TIMES AS GREAT AS THE CROP AREA IT REPRESENTS

TOMATO ACREAGE

| STATE | CENSUS 1909 | STATE | CENSUS 1909 |
|---|---|---|---|
| Md. . . . . . | 42,721 | Mo. . . . . . | 11,863 |
| N. J. . . . . | 26,882 | N. Y. . . . . | 6,636 |
| Ind. . . . . . | 16,472 | Ohio . . . . | 6,593 |
| Del. . . . . . | 13,106 | Tex. . . . . | 6,626 |
| Fla. . . . . . | 12,330 | Cal. . . . . | 5,622 |
| Va. . . . . . | 11,965 | Tenn. . . . | 5,603 |

TOMATO ACREAGE (Continued)

| STATE | CENSUS 1909 |
|---|---|
| Ill. . . . . . | 5,316 |
| Pa. . . . . . | 4,894 |
| Miss. . . . | 3,461 |
| Ky. . . . . . | 3,574 |
| Mich. . . . | 2,430 |
| Iowa. . . . | 2,463 |
| W. Va. . . | 1,846 |
| Other . . . | 12,975 |
| East . . . . | 173,767 |
| West . . . | 33,612 |
| U.S. . . . . | 207,379 |



## TOTAL FRUITS AND NUTS

APPROXIMATE ACREAGE, 1910

EACH DOT REPRESENTS 1,000 ACRES

ACTUAL AREA COVERED BY THE DOT IS 18 TIMES AS GREAT AS THE CROP AREA IT REPRESENTS

### TOTAL FRUITS AND NUTS

APPROXIMATE ACREAGE

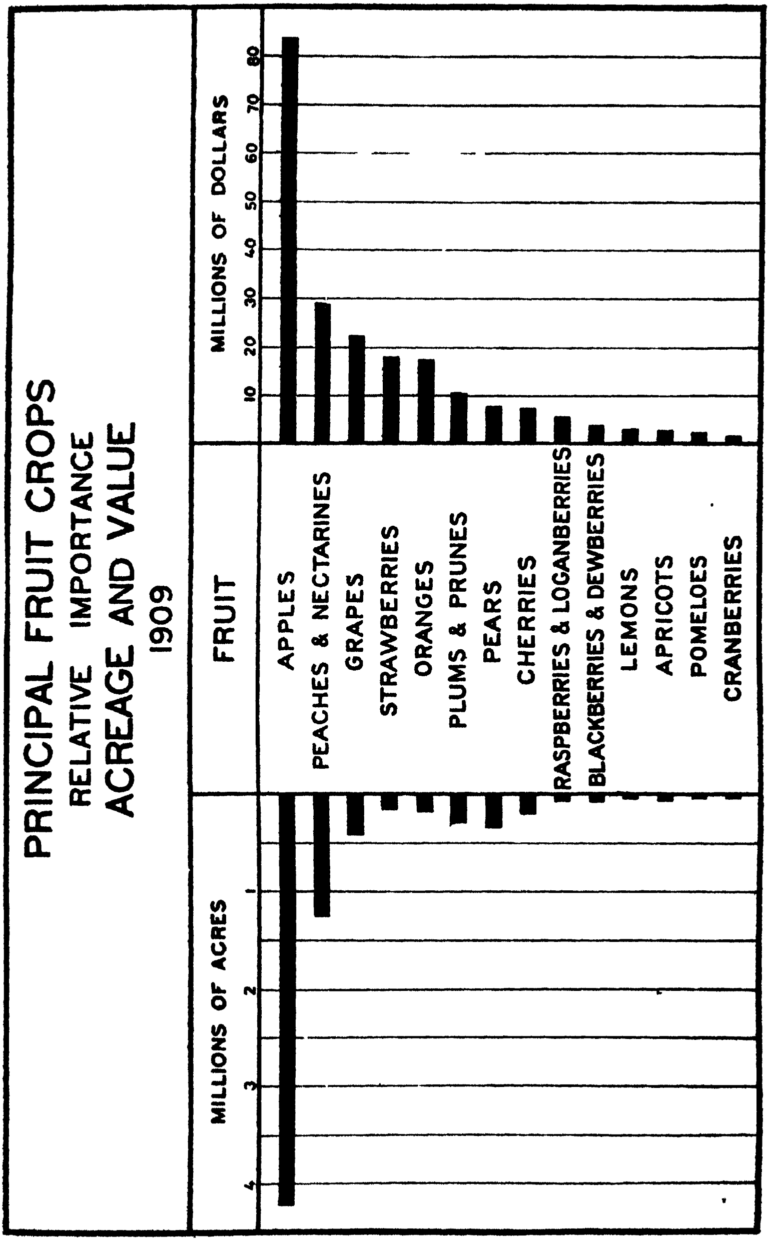
| STATE | ACRES 1910 | STATE | ACRES 1910 | STATE | ACRES 1910 |
|---|---|---|---|---|---|
| Cal . . . | 792,818 | Tenn . . | 213,571 | Oreg . . | 131,204 |
| N. Y. . . . | 584,714 | Ky. . . . . | 210,580 | Me . . . | 128,648 |
| Ohio . . | 423,240 | Ga. . . . . | 199,523 | Ala . . . | 100,699 |
| Mich . . | 412,740 | Kans . . | 197,776 | N. J. . . . | 99,867 |
| Pa. . . . . | 406,415 | W. Va . . | 195,179 | Fla . . . | 99,561 |
| Mo . . . . | 387,802 | N. C. . . . | 194,377 | Md . . . | 90,701 |
| Tex . . . | 283,419 | Ind . . . | 180,847 | Nebr . . | 88,217 |
| Ark . . . | 281,632 | Wash . . | 179,230 | Colo . . | 80,426 |
| Va . . . . | 265,096 | Okla . . | 173,551 | Wis . . . | 68,767 |
| Ill . . . . | 261,785 | Iowa . . | 164,424 | Mass . . | 63,470 |

### TOTAL FRUITS AND NUTS

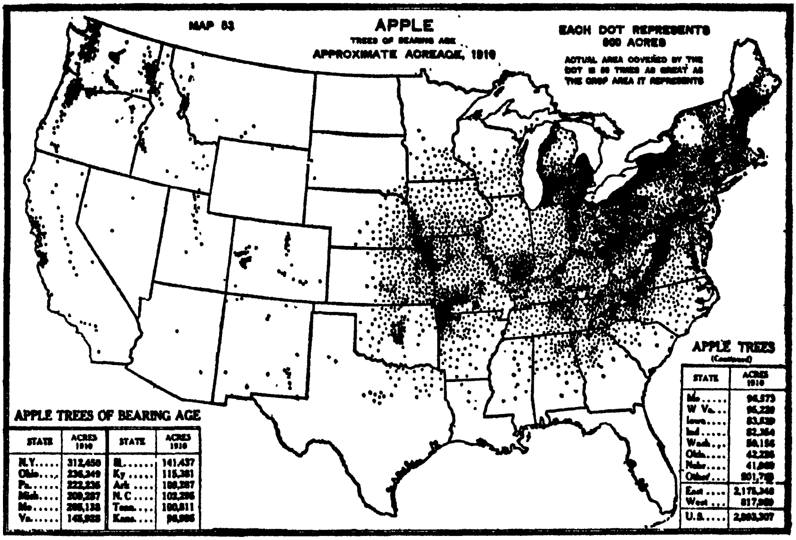
(Continued)

| STATE | ACRES 1910 |
|---|---|
| Miss . . | 60,169 |
| Idaho . | 54,685 |
| Minn . . | 50,611 |
| Del . . . | 44,668 |
| S. C. . . . | 42,975 |
| N. H. . . | 42,887 |
| Vt . . . . | 40,744 |
| Conn . . | 39,160 |
| Utah . . | 37,332 |
| Mont . . | 35,174 |
| La . . . . | 33,526 |
| N. Mex. | 28,079 |
| S. Dak . | 16,707 |
| R. I . . . | 7,097 |
| Ariz . . . | 5,112 |
| N. Dak. | 2,436 |
| Wyo . . | 1,891 |
| Nev . . . | 1,809 |
| East . . | 4,477,480 |
| West . . | 3,027,951 |
| U. S. . . | 7,505,431 |

Compare with map of value of farm land per acre (map 10) and with the maps of the different fruits.



**Graph 3**.—Fruits and nuts occupy in the United States 2.4 per cent of the land in crops and constitute 4 5 per cent of the value of all crops.


MAP 53
APPLE
TREES OF BEARING AGE
APPROXIMATE ACREAGE, 1910
EACH DOT REPRESENTS
500 ACRES
ACTUAL AREA COVERED BY THE DOT IS 80 TIMES AS GREAT AS THE CROP AREA IT REPRESENTS

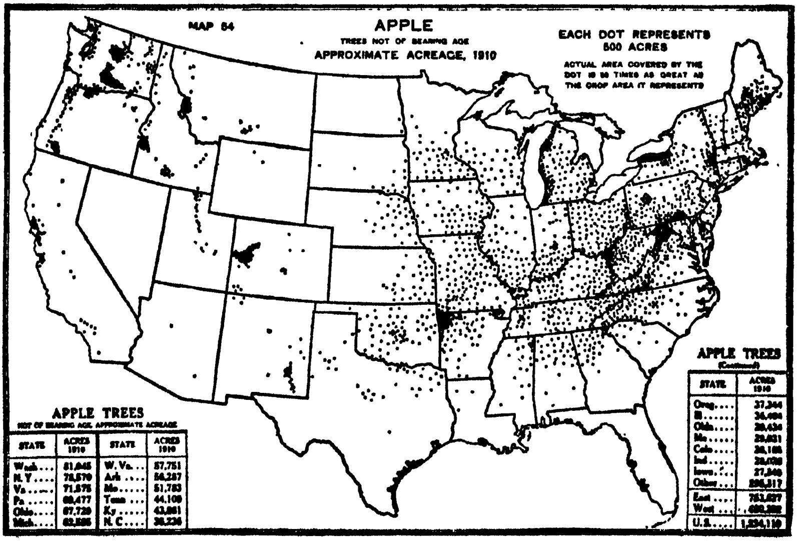
APPLE TREES OF BEARING AGE

| STATE | ACRES 1910 | STATE | ACRES 1910 |
|---|---|---|---|
| N.Y. | 312,450 | Ill. | 141,437 |
| Ohio | 236,349 | Ky | 115,381 |
| Pa. | 222,236 | Ark | 108,287 |
| Mich. | 209,287 | N.C | 102,296 |
| Mo. | 205,138 | Tenn. | 100,811 |
| Va. | 145,925 | Kans. | 98,986 |

APPLE TREES (Continued)

| STATE | ACRES 1910 |
|---|---|
| Me. | 96,573 |
| W Va. | 95,220 |
| Iowa | 83,530 |
| Ind. | 82,364 |
| Wash. | 80,156 |
| Okla. | 42,236 |
| Nebr. | 41,060 |
| Other | 801,769 |
| East | 2,175,348 |
| West | 817,959 |
| U.S. | 2,993,307 |

Compare eastern with western states.


MAP 54
APPLE
TREES NOT OF BEARING AGE
APPROXIMATE ACREAGE, 1910
EACH DOT REPRESENTS
500 ACRES
ACTUAL AREA COVERED BY THE DOT IS 80 TIMES AS GREAT AS THE CROP AREA IT REPRESENTS

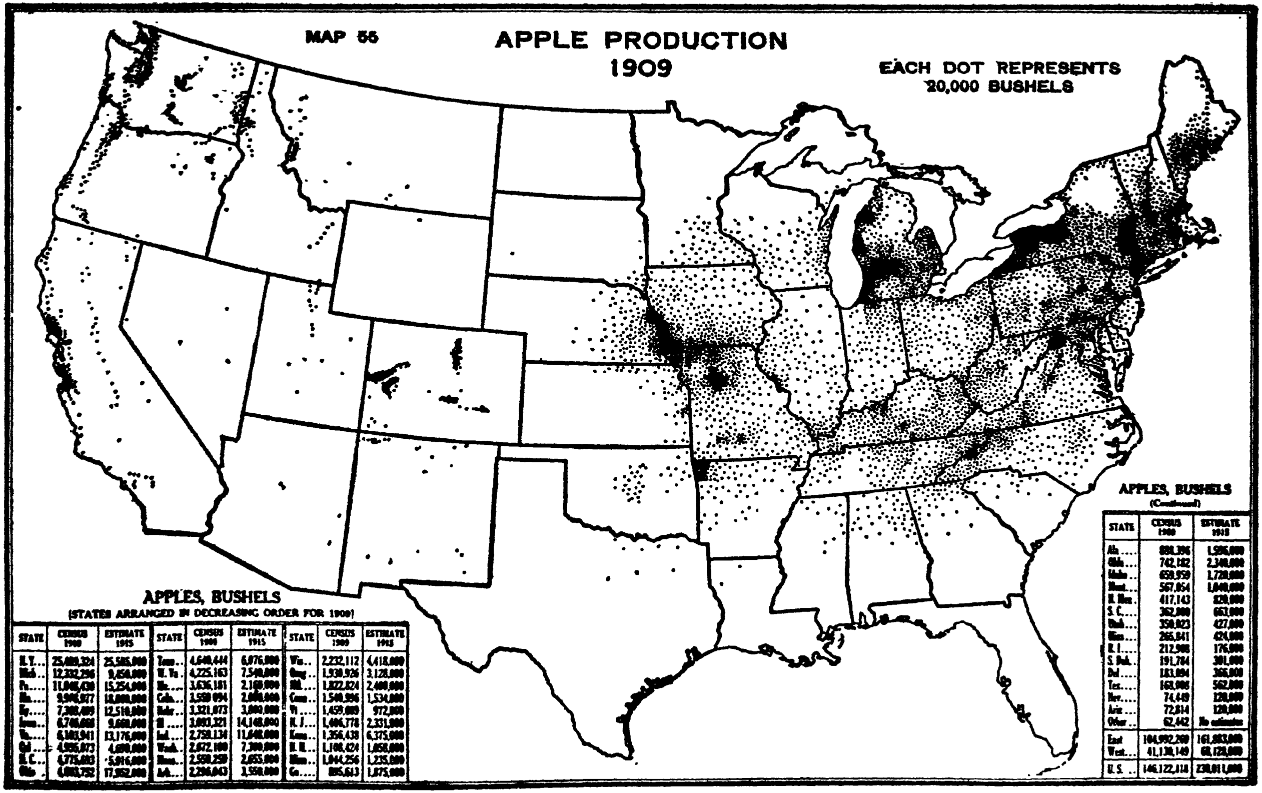
APPLE TREES
NOT OF BEARING AGE, APPROXIMATE ACREAGE

| STATE | ACRES 1910 | STATE | ACRES 1910 |
|---|---|---|---|
| Wash. | 81,045 | W. Va. | 57,751 |
| N.Y. | 78,570 | Ark | 56,287 |
| Va. | 71,575 | Mo. | 51,783 |
| Pa. | 68,477 | Tenn | 44,109 |
| Ohio | 67,729 | Ky | 43,861 |
| Mich. | 62,585 | N.C. | 38,236 |

APPLE TREES (Continued)

| STATE | ACRES 1910 |
|---|---|
| Oreg. | 37,344 |
| Ill. | 36,404 |
| Okla. | 30,434 |
| Me. | 29,831 |
| Colo. | 28,188 |
| Ind. | 28,070 |
| Iowa | 27,840 |
| Other | 295,317 |
| East | 753,827 |
| West | 480,283 |
| U.S. | 1,234,110 |

Compare Washington and Colorado with New York and Missouri.



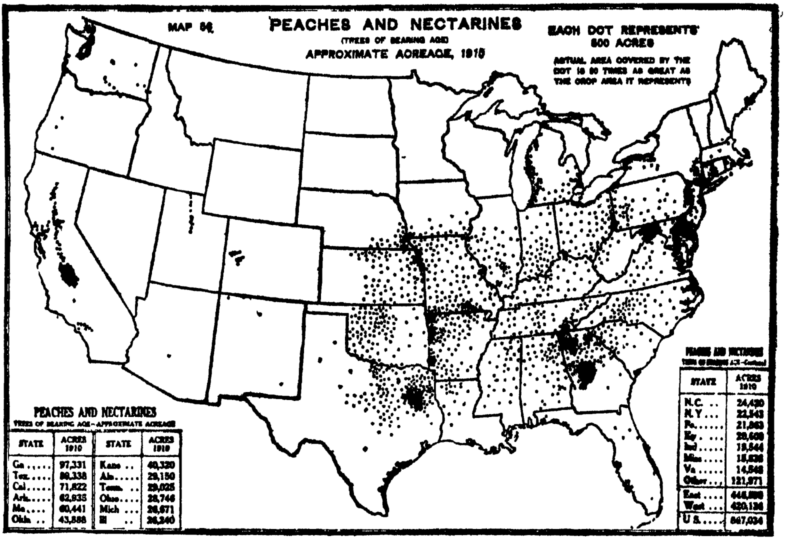
APPLES, BUSHELS
(STATES ARRANGED IN DECREASING ORDER FOR 1909)

| STATE | CENSUS 1909 | ESTIMATE 1915 | STATE | CENSUS 1909 | ESTIMATE 1915 | STATE | CENSUS 1909 | ESTIMATE 1915 |
|---|---|---|---|---|---|---|---|---|
| N. Y. | 25,409,324 | 25,565,000 | Tenn. | 4,640,444 | 6,076,000 | Wis. | 2,232,112 | 4,418,000 |
| Mich. | 12,332,296 | 9,450,000 | W. Va. | 4,225,163 | 7,540,000 | Oreg. | 1,930,926 | 3,128,000 |
| Pa. | 11,048,430 | 15,254,000 | Me. | 3,636,181 | 2,160,000 | Md. | 1,822,824 | 2,400,000 |
| Mo. | 9,946,077 | 10,000,000 | Colo. | 3,550,994 | 2,000,000 | Conn. | 1,540,956 | 1,534,000 |
| Ky. | 7,308,409 | 12,510,000 | Nebr. | 3,321,073 | 3,000,000 | Vt. | 1,459,089 | 972,000 |
| Iowa | 6,740,666 | 9,660,000 | Ill. | 3,050,321 | 14,148,000 | N. J. | 1,406,778 | 2,331,000 |
| Va. | 6,183,941 | 13,176,000 | Ind. | 2,758,134 | 11,640,000 | Kans. | 1,356,438 | 6,375,000 |
| Cal. | 4,955,073 | 4,690,000 | Wash. | 2,672,100 | 7,300,000 | N. H. | 1,108,424 | 1,058,000 |
| N. C. | 4,775,683 | 5,916,000 | Mass. | 2,558,259 | 2,655,000 | Minn. | 1,044,256 | 1,235,000 |
| Ohio | 4,003,752 | 17,352,000 | Ark. | 2,236,043 | 3,550,000 | Ga. | 895,613 | 1,875,000 |

APPLES, BUSHELS
(Continued)

| STATE | CENSUS 1909 | ESTIMATE 1915 |
|---|---|---|
| Ala. | 888,396 | 1,596,000 |
| Okla. | 742,182 | 2,340,000 |
| Idaho | 658,959 | 1,720,000 |
| Mont. | 567,054 | 1,040,000 |
| N. Mex. | 417,143 | 820,000 |
| S. C. | 362,000 | 663,000 |
| Utah | 350,023 | 427,000 |
| Miss. | 265,841 | 424,000 |
| R. I. | 212,908 | 176,000 |
| S. Dak. | 191,704 | 301,000 |
| Del. | 183,094 | 366,000 |
| Tex. | 168,905 | 562,000 |
| Nev. | 74,449 | 120,000 |
| Ariz. | 72,814 | 120,000 |
| Other | 62,442 | No estimates |
| East | 104,992,269 | 161,883,000 |
| West | 41,130,149 | 68,128,000 |
| U. S. | 146,122,418 | 230,011,000 |

The apple crop varies greatly from year to year with seasonal and other conditions.


MAP 56
PEACHES AND NECTARINES
(TREES OF BEARING AGE)
APPROXIMATE ACREAGE, 1910
EACH DOT REPRESENTS 500 ACRES
ACTUAL AREA COVERED BY THE DOT IS 50 TIMES AS GREAT AS THE CROP AREA IT REPRESENTS

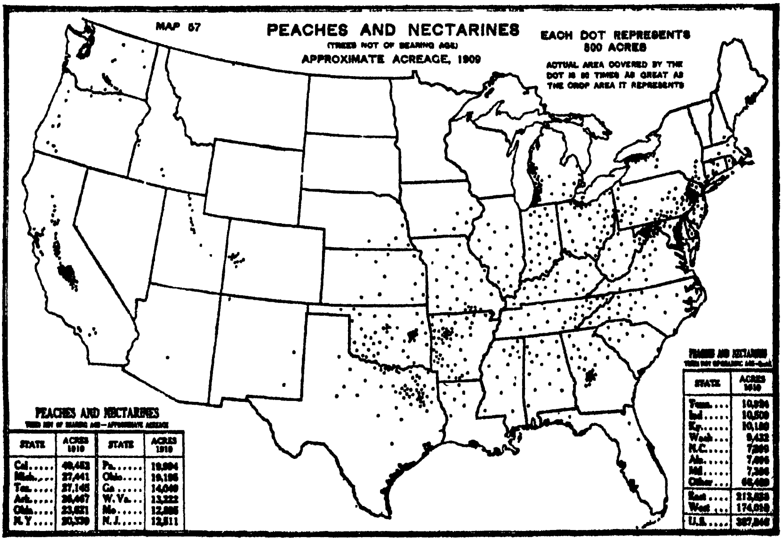
PEACHES AND NECTARINES
TREES OF BEARING AGE—APPROXIMATE ACREAGE

| STATE | ACRES 1910 | STATE | ACRES 1910 |
|---|---|---|---|
| Ga...... | 97,331 | Kans .. | 40,320 |
| Tex..... | 80,338 | Ala..... | 29,150 |
| Cal..... | 71,822 | Tenn .. | 29,025 |
| Ark..... | 62,935 | Ohio.... | 28,746 |
| Mo.... | 60,441 | Mich ... | 26,671 |
| Okla .. | 43,888 | Ill .. | 26,240 |

PEACHES AND NECTARINES
TREES OF BEARING AGE—Continued

| STATE | ACRES 1910 |
|---|---|
| N.C. .. | 24,420 |
| N.Y.... | 22,543 |
| Pa...... | 21,863 |
| Ky..... | 20,600 |
| Ind..... | 19,544 |
| Miss..... | 15,836 |
| Va...... | 14,548 |
| Other... | 121,971 |
| East .... | 446,898 |
| West ... | 420,136 |
| U.S..... | 867,034 |

Compare with map of apple trees of bearing age (map 53).


MAP 57
PEACHES AND NECTARINES
(TREES NOT OF BEARING AGE)
APPROXIMATE ACREAGE, 1909
EACH DOT REPRESENTS 500 ACRES
ACTUAL AREA COVERED BY THE DOT IS 50 TIMES AS GREAT AS THE CROP AREA IT REPRESENTS

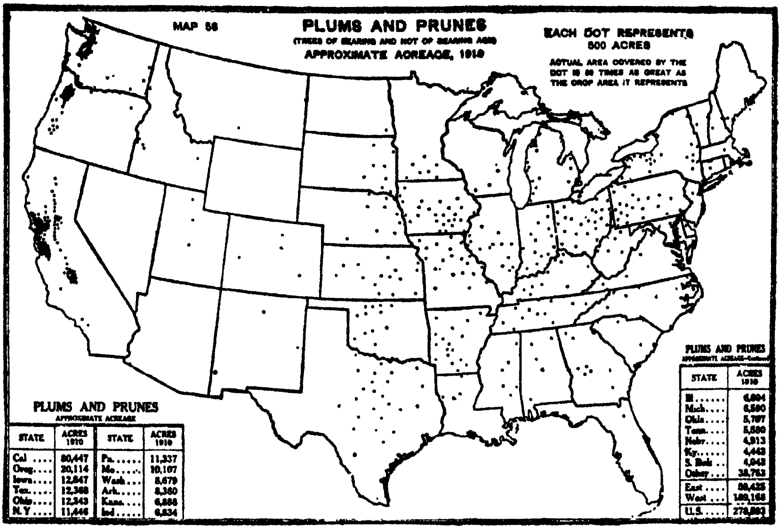
PEACHES AND NECTARINES
TREES NOT OF BEARING AGE—APPROXIMATE ACREAGE

| STATE | ACRES 1910 | STATE | ACRES 1910 |
|---|---|---|---|
| Cal..... | 40,482 | Pa...... | 19,994 |
| Mich.... | 27,441 | Ohio.... | 19,196 |
| Tex..... | 27,145 | Ga ..... | 14,040 |
| Ark..... | 26,467 | W. Va... | 13,222 |
| Okla..... | 23,821 | Mo...... | 12,886 |
| N.Y.... | 20,339 | N.J...... | 12,811 |

PEACHES AND NECTARINES
TREES NOT OF BEARING AGE—Concl.

| STATE | ACRES 1910 |
|---|---|
| Tenn.... | 10,936 |
| Ind..... | 10,500 |
| Ky...... | 10,180 |
| Wash... | 9,432 |
| N.C..... | 7,809 |
| Ala..... | 7,496 |
| Md..... | 7,386 |
| Other... | 66,480 |
| East .... | 213,836 |
| West ... | 174,010 |
| U.S..... | 387,846 |

Compare with map of apple trees not of bearing age (map 54).


MAP 58
PLUMS AND PRUNES
(TREES OF BEARING AND NOT OF BEARING AGE)
APPROXIMATE ACREAGE, 1910
EACH DOT REPRESENTS 500 ACRES
ACTUAL AREA COVERED BY THE DOT IS 80 TIMES AS GREAT AS THE CROP AREA IT REPRESENTS

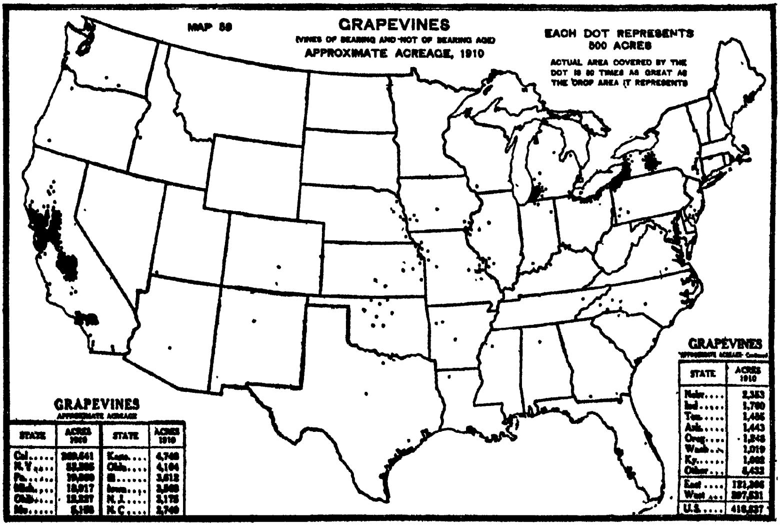
PLUMS AND PRUNES
APPROXIMATE ACREAGE

| STATE | ACRES 1910 | STATE | ACRES 1910 |
|---|---|---|---|
| Cal ..... | 80,447 | Pa...... | 11,337 |
| Oreg..... | 20,114 | Mo...... | 10,107 |
| Iowa..... | 12,847 | Wash.... | 8,679 |
| Tex..... | 12,368 | Ark..... | 8,360 |
| Ohio..... | 12,343 | Kans.... | 6,886 |
| N.Y..... | 11,446 | Ind..... | 6,834 |

PLUMS AND PRUNES
APPROXIMATE ACREAGE—Continued

| STATE | ACRES 1910 |
|---|---|
| Ill....... | 6,994 |
| Mich..... | 6,590 |
| Okla..... | 5,787 |
| Tenn..... | 5,580 |
| Nebr..... | 4,913 |
| Ky....... | 4,442 |
| S. Dak .. | 4,043 |
| Other.... | 38,763 |
| East..... | 89,425 |
| West.... | 189,168 |
| U.S..... | 278,593 |

Compare with maps of peaches and nectarines (maps 56 and 57).


MAP 59
GRAPEVINES
(VINES OF BEARING AND NOT OF BEARING AGE)
APPROXIMATE ACREAGE, 1910
EACH DOT REPRESENTS 500 ACRES
ACTUAL AREA COVERED BY THE DOT IS 80 TIMES AS GREAT AS THE CROP AREA IT REPRESENTS

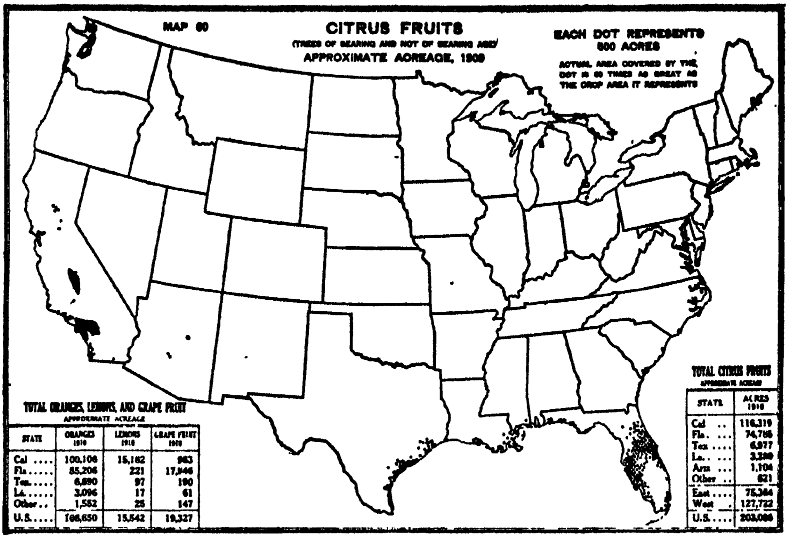
GRAPEVINES
APPROXIMATE ACREAGE

| STATE | ACRES 1910 | STATE | ACRES 1910 |
|---|---|---|---|
| Cal...... | 269,641 | Kans.... | 4,740 |
| N.Y..... | 52,865 | Okla.... | 4,164 |
| Pa....... | 19,609 | Ill....... | 3,612 |
| Mich..... | 18,917 | Iowa.... | 3,568 |
| Ohio..... | 12,327 | N.J..... | 3,175 |
| Mo...... | 5,188 | N.C..... | 2,740 |

GRAPEVINES
APPROXIMATE ACREAGE—Continued

| STATE | ACRES 1910 |
|---|---|
| Nebr..... | 2,353 |
| Ind...... | 1,760 |
| Tex..... | 1,486 |
| Ark..... | 1,443 |
| Oreg.... | 1,348 |
| Wash... | 1,019 |
| Ky...... | 1,062 |
| Other... | 6,432 |
| East.... | 121,306 |
| West.... | 297,531 |
| U.S..... | 418,837 |

Compare with maps of apples (maps 53 and 54), peaches and nectarines (maps 56 and 57), and plums and prunes (map 58).


MAP 60
CITRUS FRUITS
(TREES OF BEARING AND NOT OF BEARING AGE)
APPROXIMATE ACREAGE, 1909
EACH DOT REPRESENTS 500 ACRES
ACTUAL AREA COVERED BY THE DOT IS 60 TIMES AS GREAT AS THE CROP AREA IT REPRESENTS

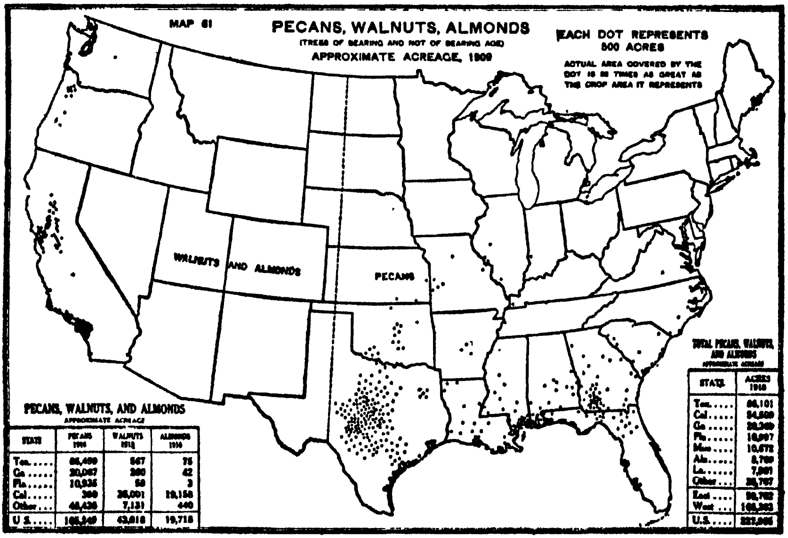
TOTAL ORANGES, LEMONS, AND GRAPE FRUIT
APPROXIMATE ACREAGE

| STATE | ORANGES 1910 | LEMONS 1910 | GRAPE FRUIT 1910 |
|---|---|---|---|
| Cal .... | 100,106 | 15,182 | 983 |
| Fla..... | 85,206 | 221 | 17,946 |
| Tex..... | 6,690 | 97 | 190 |
| La...... | 3,096 | 17 | 61 |
| Other.. | 1,552 | 25 | 147 |
| U.S.... | 196,650 | 15,542 | 19,327 |

TOTAL CITRUS FRUITS
APPROXIMATE ACREAGE

| STATE | ACRES 1910 |
|---|---|
| Cal .. | 116,319 |
| Fla. ... | 74,786 |
| Tex .... | 6,977 |
| La. ... | 3,280 |
| Ariz ... | 1,104 |
| Other .. | 621 |
| East .... | 75,384 |
| West . | 127,722 |
| U.S.... | 203,086 |

Compare with map of agricultural provinces (map 1).


MAP 61
PECANS, WALNUTS, ALMONDS
(TREES OF BEARING AND NOT OF BEARING AGE)
APPROXIMATE ACREAGE, 1909
EACH DOT REPRESENTS 500 ACRES
ACTUAL AREA COVERED BY THE DOT IS 60 TIMES AS GREAT AS THE CROP AREA IT REPRESENTS
WALNUTS AND ALMONDS
PECANS

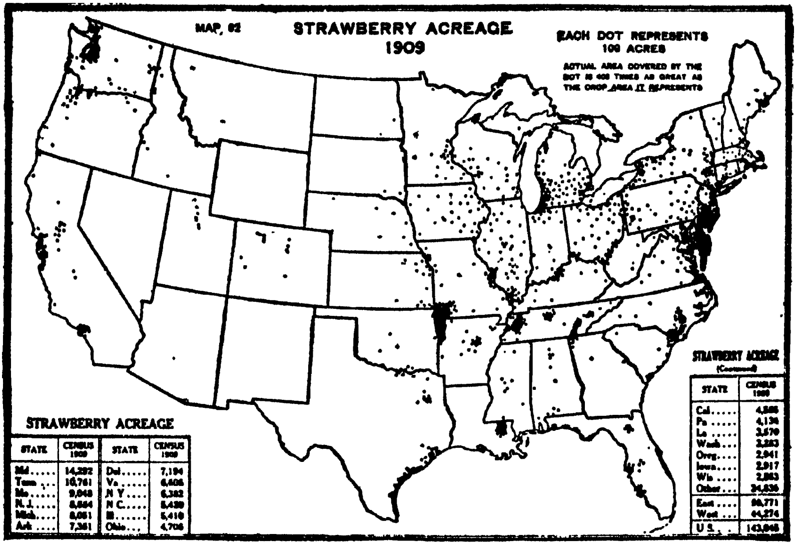
PECANS, WALNUTS, AND ALMONDS
APPROXIMATE ACREAGE

| STATE | PECANS 1910 | WALNUTS 1910 | ALMONDS 1910 |
|---|---|---|---|
| Tex..... | 86,459 | 867 | 75 |
| Ga ..... | 30,067 | 560 | 42 |
| Fla..... | 10,836 | 59 | 3 |
| Cal..... | 350 | 35,001 | 19,158 |
| Other... | 48,426 | 7,131 | 440 |
| U S.... | 166,249 | 43,618 | 19,718 |

TOTAL PECANS, WALNUTS, AND ALMONDS
APPROXIMATE ACREAGE

| STATE | ACRES 1910 |
|---|---|
| Tex..... | 86,101 |
| Cal..... | 54,509 |
| Ga ..... | 30,369 |
| Fla..... | 10,897 |
| Miss.... | 10,672 |
| Ala..... | 8,709 |
| La...... | 7,991 |
| Other... | 28,767 |
| East .... | 58,702 |
| West ... | 168,363 |
| U.S.... | 227,065 |

Compare with maps of citrus fruits (map 60) and grapes (map 59).


MAP 62
STRAWBERRY ACREAGE
1909
EACH DOT REPRESENTS
100 ACRES
ACTUAL AREA COVERED BY THE DOT IS 400 TIMES AS GREAT AS THE CROP AREA IT REPRESENTS

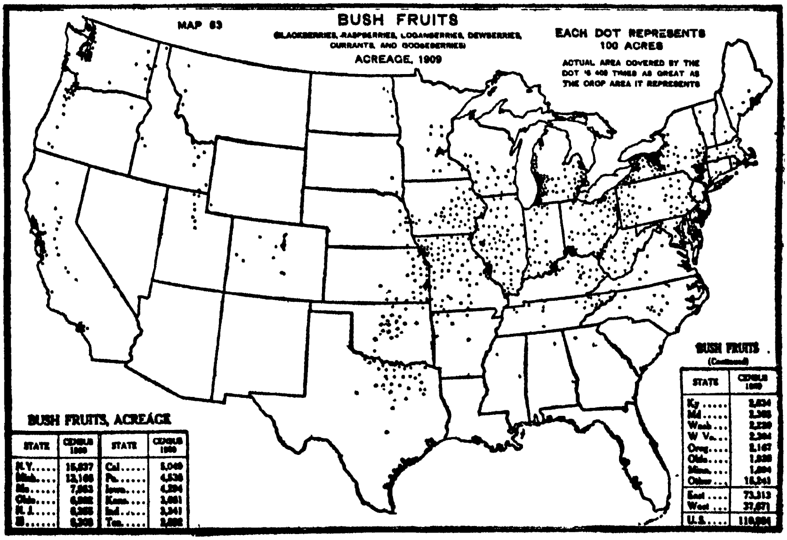
STRAWBERRY ACREAGE

| STATE | CENSUS 1909 | STATE | CENSUS 1909 |
|---|---|---|---|
| Md..... | 14,292 | Del..... | 7,194 |
| Tenn.... | 10,761 | Va..... | 6,606 |
| Mo..... | 9,048 | N Y..... | 6,382 |
| N. J..... | 8,664 | N C..... | 5,430 |
| Mich.... | 8,051 | Ill..... | 5,410 |
| Ark..... | 7,361 | Ohio... | 4,706 |

STRAWBERRY ACREAGE
(Continued)

| STATE | CENSUS 1909 |
|---|---|
| Cal..... | 4,886 |
| Pa..... | 4,134 |
| La..... | 3,570 |
| Wash... | 3,283 |
| Oreg.... | 2,941 |
| Iowa.... | 2,917 |
| Wis.... | 2,883 |
| Other... | 34,836 |
| East.... | 98,771 |
| West... | 44,274 |
| U S.. . | 143,045 |

Compare with maps of apples (maps 53 and 54) and peaches and nectarines (maps 56 and 57).


MAP 63
BUSH FRUITS
(BLACKBERRIES, RASPBERRIES, LOGANBERRIES, DEWBERRIES, CURRANTS, AND GOOSEBERRIES)
ACREAGE, 1909
EACH DOT REPRESENTS
100 ACRES
ACTUAL AREA COVERED BY THE DOT IS 400 TIMES AS GREAT AS THE CROP AREA IT REPRESENTS

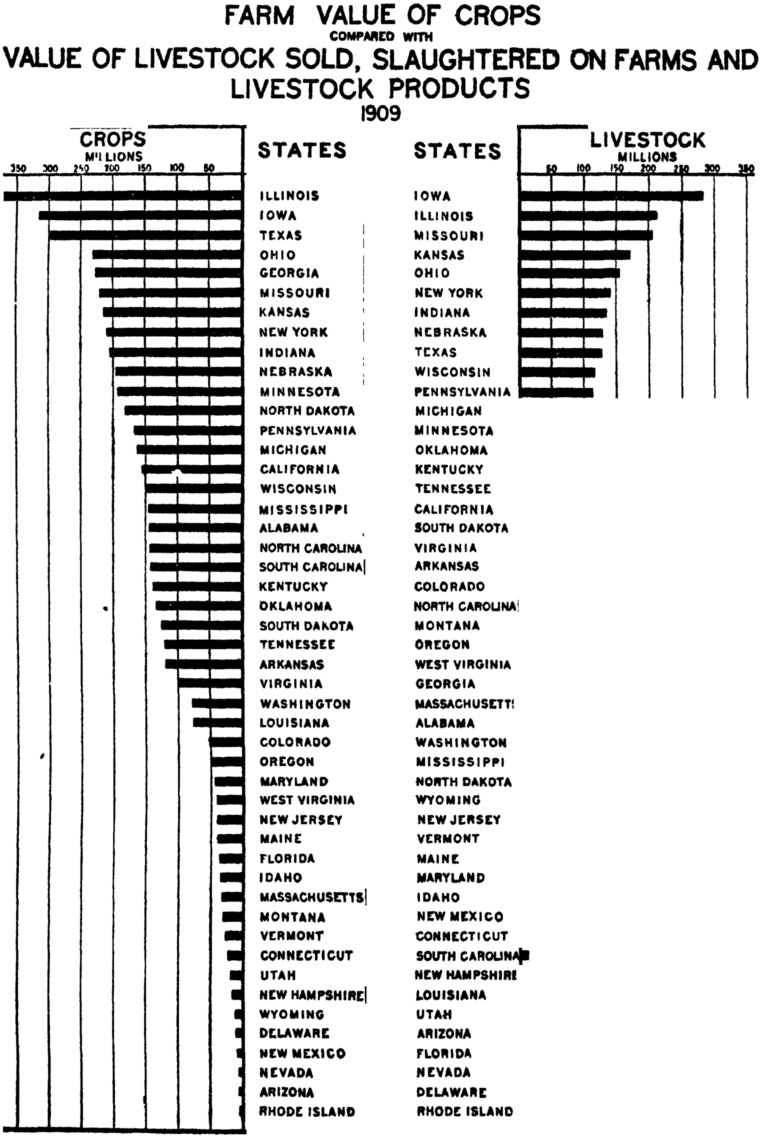
BUSH FRUITS, ACREAGE

| STATE | CENSUS 1909 | STATE | CENSUS 1909 |
|---|---|---|---|
| N.Y..... | 15,837 | Cal..... | 5,049 |
| Mich.... | 12,166 | Pa..... | 4,536 |
| Mo..... | 7,863 | Iowa.... | 4,294 |
| Ohio.... | 6,862 | Kans.... | 3,861 |
| N. J..... | 6,365 | Ind..... | 3,341 |
| Ill...... | 6,309 | Tex..... | 2,858 |

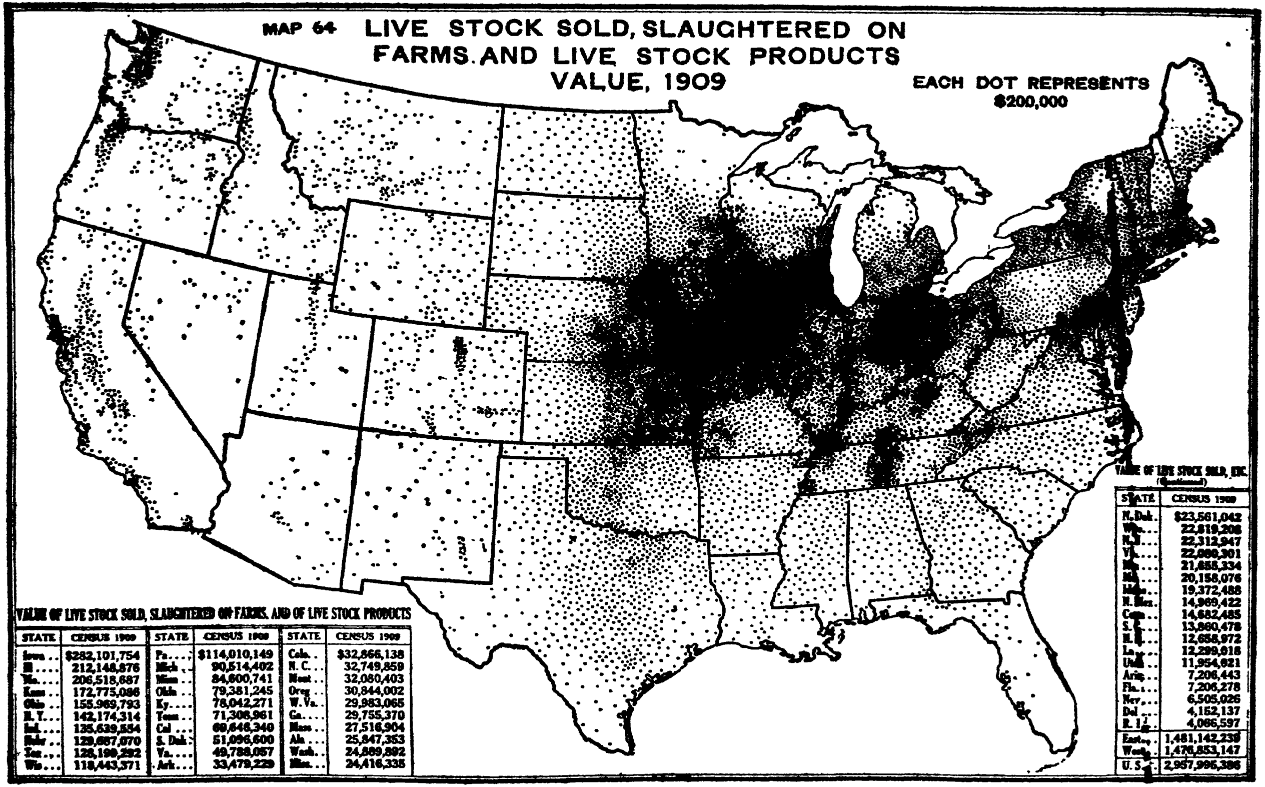
BUSH FRUITS
(Continued)

| STATE | CENSUS 1909 |
|---|---|
| Ky..... | 2,634 |
| Md..... | 2,365 |
| Wash... | 2,330 |
| W Va... | 2,304 |
| Oreg.... | 2,167 |
| Okla.... | 1,838 |
| Minn.... | 1,804 |
| Other... | 16,341 |
| East.... | 73,313 |
| West... | 37,671 |
| U.S.... | 110,984 |

Compare with map of strawberries (map 62).



GRAPH 4.—A large proportion of the crops is fed to live stock.



MAP 64 LIVE STOCK SOLD, SLAUGHTERED ON FARMS AND LIVE STOCK PRODUCTS VALUE, 1909

EACH DOT REPRESENTS $200,000

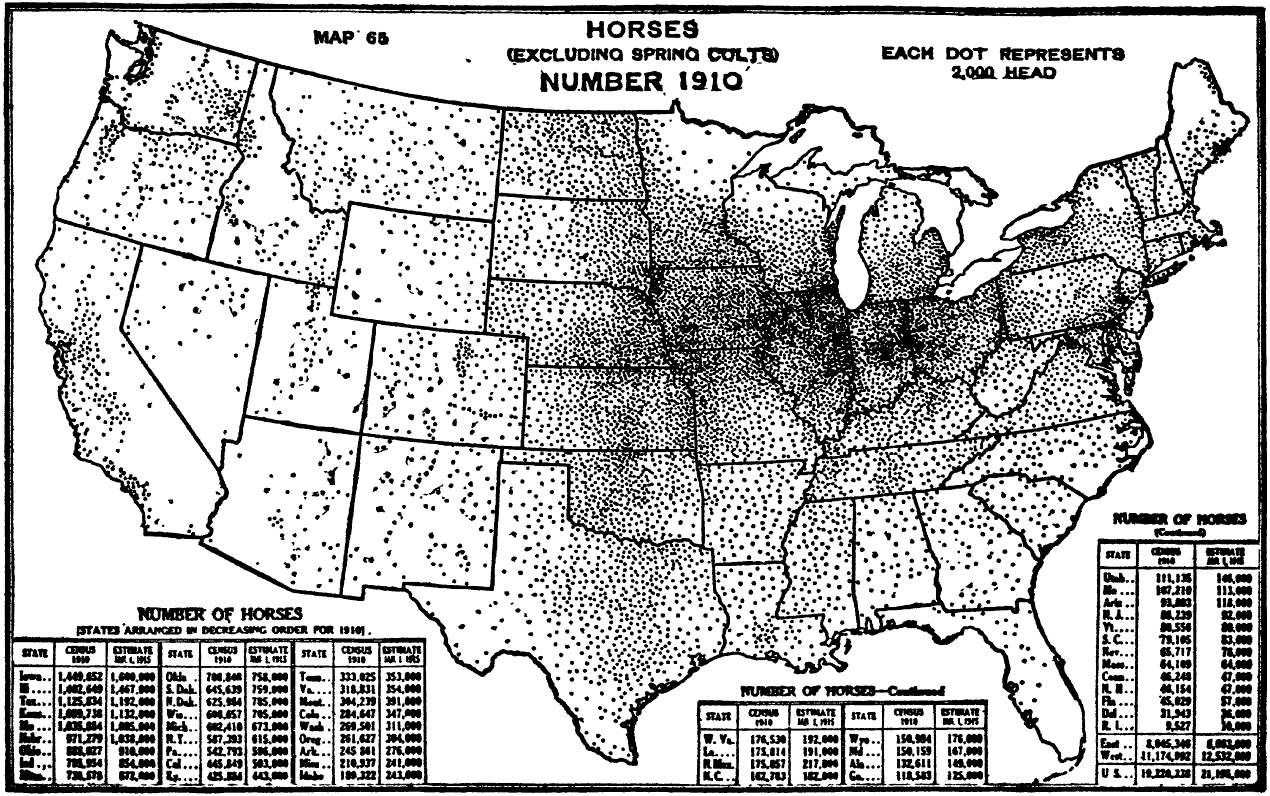
VALUE OF LIVE STOCK SOLD, SLAUGHTERED ON FARMS, AND OF LIVE STOCK PRODUCTS

| STATE | CENSUS 1909 | STATE | CENSUS 1909 | STATE | CENSUS 1909 |
|---|---|---|---|---|---|
| Iowa . . | $282,101,754 | Pa. . . . | $114,010,149 | Colo. . | $32,866,138 |
| Ill. . . . | 212,148,876 | Mich . . | 90,514,402 | N. C. . . | 32,749,859 |
| Mo. . . . | 206,518,687 | Minn . . | 84,600,741 | Mont . . | 32,080,403 |
| Kans . . | 172,775,086 | Okla . . | 79,381,245 | Oreg . . | 30,844,002 |
| Ohio . . | 155,969,793 | Ky. . . . | 78,042,271 | W. Va. . | 29,983,065 |
| N. Y. . . | 142,174,314 | Tenn . . | 71,308,961 | Ga. . . . | 29,755,370 |
| Ind. . . . | 135,639,554 | Cal . . . | 60,646,340 | Mass . . | 27,516,904 |
| Nebr . . | 129,687,070 | S. Dak . | 51,096,600 | Ala . . . | 25,847,353 |
| Tex . . . | 128,190,292 | Va. . . . | 49,788,057 | Wash. . | 24,889,892 |
| Wis . . . | 118,443,371 | Ark . . . | 33,479,229 | Miss. . . | 24,416,335 |

VALUE OF LIVE STOCK SOLD, ETC. (Continued)

| STATE | CENSUS 1909 |
|---|---|
| N. Dak. | $23,561,042 |
| Wyo. . . . | 22,819,206 |
| N. J. . . . | 22,312,947 |
| Vt. . . . | 22,060,301 |
| Me. . . . | 21,655,334 |
| Md. . . . | 20,158,076 |
| Idaho . . | 19,372,488 |
| N. Mex. | 14,969,422 |
| Conn . . | 14,682,485 |
| S. C. . . . | 13,860,478 |
| N. H. . . . | 12,658,972 |
| La. . . . | 12,299,018 |
| Utah . . | 11,954,621 |
| Ariz. . . | 7,206,443 |
| Fla. . . . | 7,206,278 |
| Nev. . . | 6,505,026 |
| Del . . . | 4,152,137 |
| R. I. . . | 4,086,597 |
| East . . | 1,481,142,239 |
| West . . | 1,476,853,147 |
| U. S. . . | 2,957,995,386 |

Compare with maps of value of all crops (map 6) and receipts from sale of dairy products (map 70).



**NUMBER OF HORSES**

[STATES ARRANGED IN DECREASING ORDER FOR 1910].

| STATE | CENSUS 1910 | ESTIMATE JAN. 1, 1915 | STATE | CENSUS 1910 | ESTIMATE JAN. 1, 1915 | STATE | CENSUS 1910 | ESTIMATE JAN. 1, 1915 |
|---|---|---|---|---|---|---|---|---|
| Iowa.. | 1,449,652 | 1,600,000 | Okla. . | 706,840 | 758,000 | Tenn.. | 333,025 | 353,000 |
| Ill..... | 1,452,649 | 1,467,000 | S. Dak. | 645,639 | 759,000 | Va.... | 318,831 | 354,000 |
| Tex.... | 1,125,834 | 1,192,000 | N. Dak. | 625,984 | 785,000 | Mont.. | 304,239 | 391,000 |
| Kans... | 1,089,738 | 1,132,000 | Wis.... | 609,657 | 705,000 | Colo.. | 284,647 | 347,000 |
| Mo.... | 1,035,884 | 1,085,000 | Mich.. | 602,410 | 673,000 | Wash. | 269,501 | 311,000 |
| Nebr.. | 971,279 | 1,038,000 | N.Y.... | 587,383 | 615,000 | Oreg.. | 261,627 | 304,000 |
| Ohio.. | 888,027 | 910,000 | Pa..... | 542,793 | 596,000 | Ark... | 245,861 | 276,000 |
| Ind.... | 795,954 | 854,000 | Cal.... | 445,849 | 503,000 | Miss.. | 210,337 | 241,000 |
| Minn.. | 738,578 | 872,000 | Ky.... | 425,884 | 443,000 | Idaho | 180,322 | 243,000 |

**NUMBER OF HORSES—Continued**

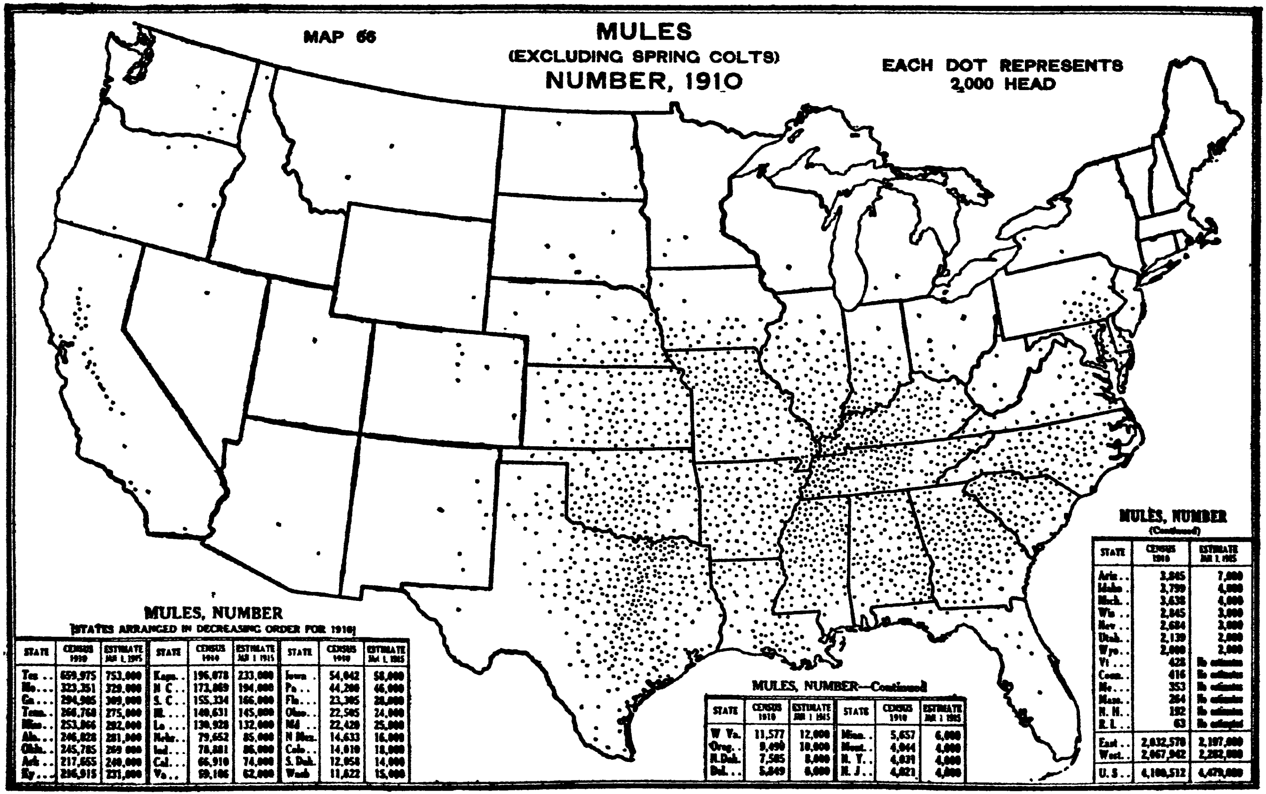
| STATE | CENSUS 1910 | ESTIMATE JAN. 1, 1915 | STATE | CENSUS 1910 | ESTIMATE JAN. 1, 1915 |
|---|---|---|---|---|---|
| W. Va. | 176,530 | 192,000 | Wyo... | 150,984 | 176,000 |
| La.... | 175,814 | 191,000 | Md.... | 150,159 | 167,000 |
| N. Mex. | 175,057 | 217,000 | Ala.... | 132,611 | 149,000 |
| N. C... | 162,703 | 182,000 | Ga.... | 118,583 | 125,000 |

**NUMBER OF HORSES**

(Continued)

| STATE | CENSUS 1910 | ESTIMATE JAN. 1, 1915 |
|---|---|---|
| Utah.. | 111,135 | 146,000 |
| Me.... | 107,210 | 113,000 |
| Ariz... | 93,883 | 118,000 |
| N. J... | 88,239 | 92,000 |
| Vt..... | 80,556 | 88,000 |
| S. C... | 73,105 | 83,000 |
| Nev.... | 65,717 | 78,000 |
| Mass.. | 64,109 | 64,000 |
| Conn.. | 46,248 | 47,000 |
| N. H... | 46,154 | 47,000 |
| Fla.... | 45,029 | 57,000 |
| Del.... | 31,343 | 36,000 |
| R. I... | 9,527 | 10,000 |
| East.. | 8,045,346 | 8,663,000 |
| West.. | 11,174,982 | 12,532,000 |
| U. S... | 19,220,328 | 21,195,000 |

Compare with map of land in crops (map 5).



MULES, NUMBER

[STATES ARRANGED IN DECREASING ORDER FOR 1910]

| STATE | CENSUS 1910 | ESTIMATE JAN 1, 1915 | STATE | CENSUS 1910 | ESTIMATE JAN 1, 1915 | STATE | CENSUS 1910 | ESTIMATE JAN 1, 1915 |
|---|---|---|---|---|---|---|---|---|
| Tex. . . | 659,975 | 753,000 | Kans. . | 196,078 | 233,000 | Iowa . | 54,042 | 58,000 |
| Mo. . . . | 323,351 | 329,000 | N C. . . | 173,069 | 194,000 | Pa. . . | 44,200 | 46,000 |
| Ga. . . . | 294,965 | 309,000 | S. C. . . | 155,334 | 166,000 | Fla. . . . | 23,305 | 26,000 |
| Tenn. . | 266,760 | 275,000 | Ill. . . . | 140,631 | 145,000 | Ohio. . . | 22,505 | 24,000 |
| Miss. . | 253,066 | 282,000 | La. . . . | 130,928 | 132,000 | Md. . . | 22,420 | 25,000 |
| Ala. . . | 246,028 | 281,000 | Nebr. . . | 79,652 | 85,000 | N Mex. | 14,633 | 16,000 |
| Okla. . | 245,785 | 269,000 | Ind. . . . | 78,881 | 86,000 | Colo. . . | 14,010 | 18,000 |
| Ark. . . | 217,655 | 240,000 | Cal. . . . | 66,910 | 74,000 | S. Dak. | 12,058 | 14,000 |
| Ky. . . | 216,915 | 231,000 | Va. . . | 59,106 | 62,000 | Wash | 11,622 | 15,000 |

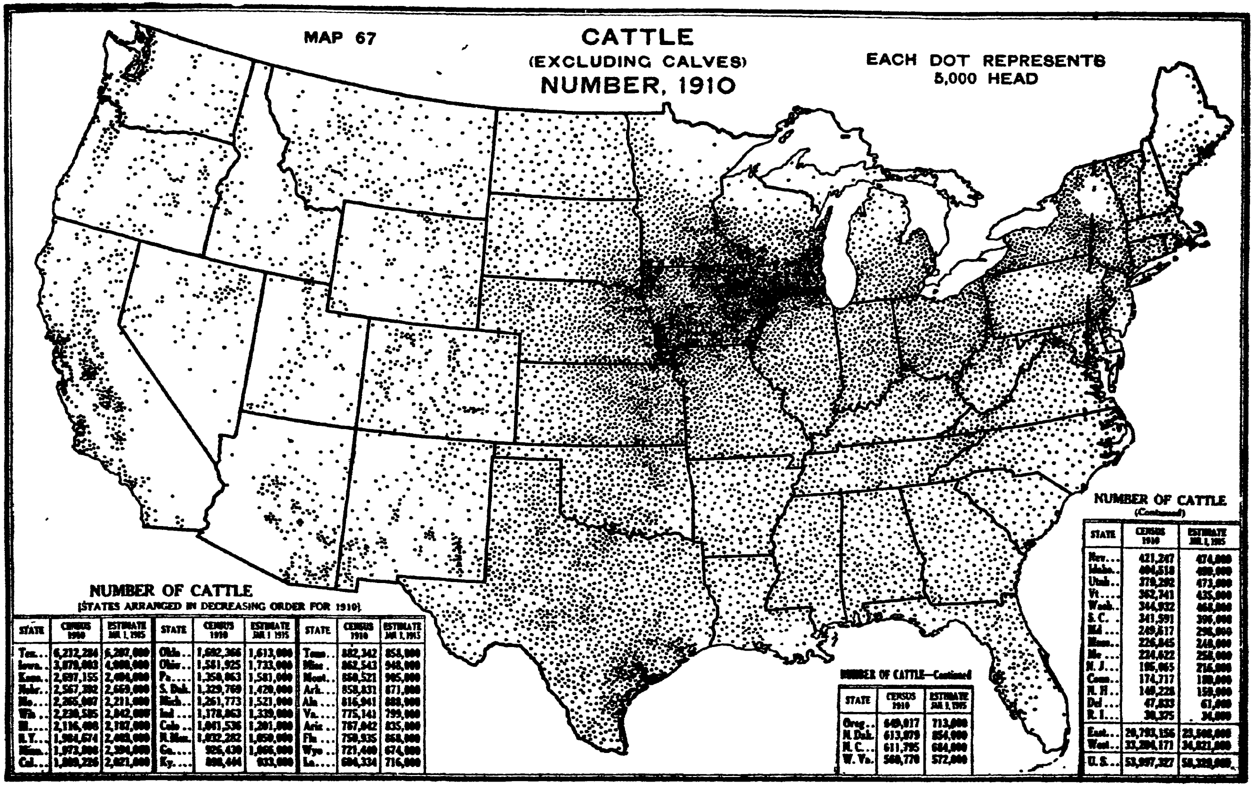
MULES, NUMBER—Continued

| STATE | CENSUS 1910 | ESTIMATE JAN 1 1915 | STATE | CENSUS 1910 | ESTIMATE JAN 1 1915 |
|---|---|---|---|---|---|
| W Va. | 11,577 | 12,000 | Minn. . | 5,657 | 6,000 |
| Oreg. . | 9,490 | 10,000 | Mont. . | 4,044 | 4,000 |
| N.Dak. | 7,585 | 8,000 | N. Y. . . | 4,039 | 4,000 |
| Del. . . | 5,849 | 6,000 | N. J. . . | 4,021 | 4,000 |

MULES, NUMBER
(Continued)

| STATE | CENSUS 1910 | ESTIMATE JAN 1, 1915 |
|---|---|---|
| Ariz. . . | 3,845 | 7,000 |
| Idaho . | 3,799 | 4,000 |
| Mich. . . | 3,638 | 4,000 |
| Wis . . | 2,845 | 3,000 |
| Nev . . | 2,684 | 3,000 |
| Utah. . | 2,139 | 2,000 |
| Wyo. . . | 2,000 | 2,000 |
| Vt . . . . | 428 | No estimate |
| Conn. . | 416 | No estimate |
| Me. . . . | 353 | No estimate |
| Mass. . | 264 | No estimate |
| N. H. . . | 192 | No estimate |
| R. I. . . | 63 | No estimate |
| East . . | 2,032,570 | 2,197,000 |
| West. . | 2,067,942 | 2,282,000 |
| U. S . . . | 4,100,512 | 4,479,000 |

Compare with maps of horses (map 65) and cotton (map 15).



NUMBER OF CATTLE
[STATES ARRANGED IN DECREASING ORDER FOR 1910]

| STATE | CENSUS 1910 | ESTIMATE JAN. 1, 1915 | STATE | CENSUS 1910 | ESTIMATE JAN. 1, 1915 | STATE | CENSUS 1910 | ESTIMATE JAN. 1, 1915 |
|---|---|---|---|---|---|---|---|---|
| Tex. . . | 6,232,284 | 6,287,000 | Okla. . . | 1,682,366 | 1,613,000 | Tenn. . . | 882,342 | 858,000 |
| Iowa. . | 3,078,003 | 4,000,000 | Ohio. . | 1,581,925 | 1,733,000 | Miss. . | 862,543 | 948,000 |
| Kans. . | 2,697,155 | 2,404,000 | Pa. . . . | 1,358,063 | 1,581,000 | Mont. . | 860,521 | 905,000 |
| Nebr. . | 2,567,392 | 2,669,000 | S. Dak. | 1,329,760 | 1,420,000 | Ark. . . | 858,831 | 871,000 |
| Mo. . . | 2,265,007 | 2,211,000 | Mich. . | 1,261,773 | 1,521,000 | Ala. . . | 816,941 | 888,000 |
| Wis. . | 2,230,585 | 2,042,000 | Ind. . . | 1,178,063 | 1,339,000 | Va. . . . | 775,141 | 799,000 |
| Ill. . . . | 2,116,408 | 2,187,000 | Colo. . | 1,041,536 | 1,201,000 | Ariz. . | 787,042 | 835,000 |
| N.Y. . . | 1,984,674 | 2,083,000 | N. Mex. | 1,032,282 | 1,050,000 | Fla. . . | 758,935 | 868,000 |
| Minn. . | 1,973,008 | 2,394,000 | Ga. . . . | 926,430 | 1,066,000 | Wyo. . | 721,440 | 674,000 |
| Cal. . . | 1,880,226 | 2,021,000 | Ky. . . . | 898,444 | 933,000 | La. . . . | 684,334 | 716,000 |

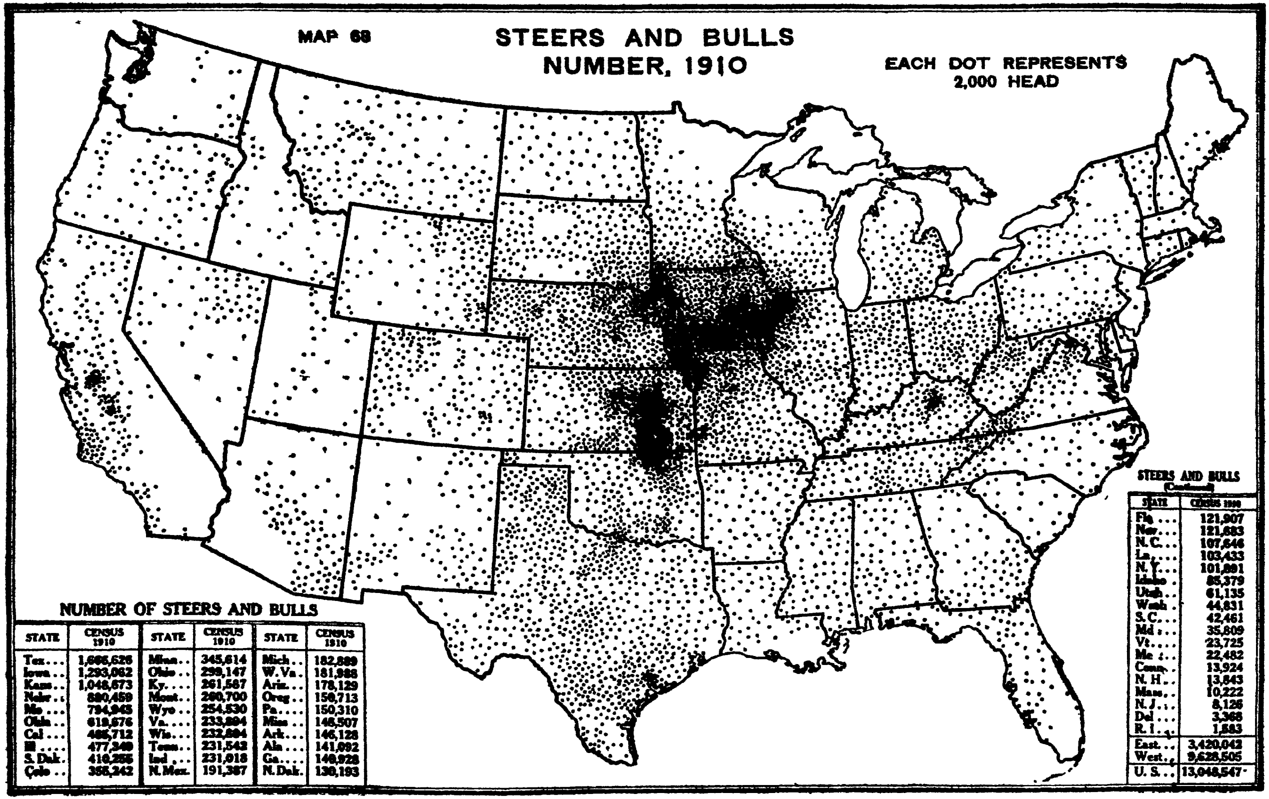
NUMBER OF CATTLE—Continued

| STATE | CENSUS 1910 | ESTIMATE JAN. 1, 1915 |
|---|---|---|
| Oreg. . | 649,017 | 713,000 |
| N. Dak. | 613,879 | 854,000 |
| N. C. . . | 611,795 | 684,000 |
| W. Va. | 568,770 | 572,000 |

NUMBER OF CATTLE
(Continued)

| STATE | CENSUS 1910 | ESTIMATE JAN. 1, 1915 |
|---|---|---|
| Nev. . . | 421,247 | 474,000 |
| Idaho. . | 404,518 | 499,000 |
| Utah. . | 379,282 | 473,000 |
| Vt. . . . | 362,741 | 435,000 |
| Wash. . | 344,932 | 466,000 |
| S. C. . | 341,591 | 396,000 |
| Md. . . | 249,617 | 296,000 |
| Mass. . | 226,845 | 248,000 |
| Me. . . | 224,622 | 258,000 |
| N. J. . . | 196,065 | 216,000 |
| Conn. . | 174,717 | 188,000 |
| N. H. . | 148,228 | 158,000 |
| Del. . . | 47,833 | 61,000 |
| R. I. . . | 38,375 | 34,000 |
| East. . . | 20,793,156 | 23,508,000 |
| West. . | 33,204,171 | 34,821,000 |
| U. S. . . | 53,997,327 | 58,329,000 |

Compare with maps of corn (map 13), hay and forage (map 26), and improved land not in crops, mostly pasture (map 25).



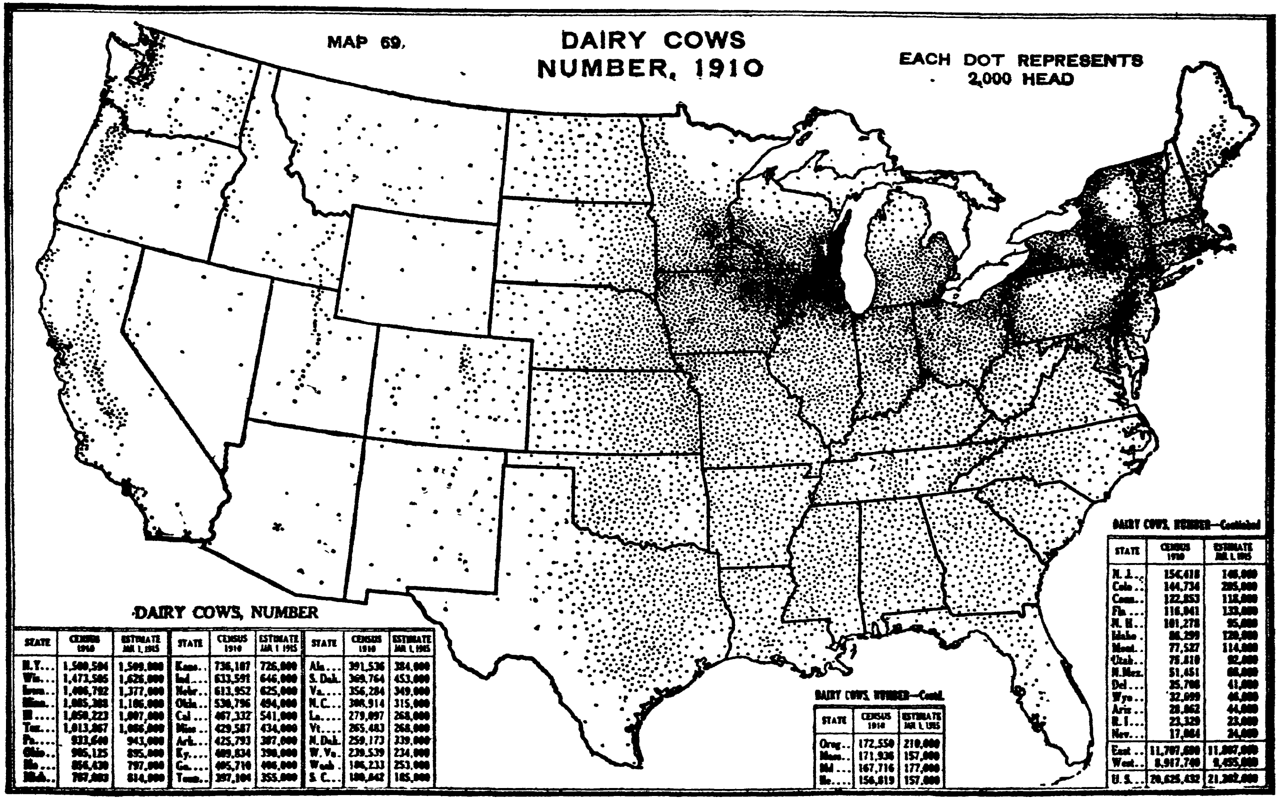
NUMBER OF STEERS AND BULLS

| STATE | CENSUS 1910 | STATE | CENSUS 1910 | STATE | CENSUS 1910 |
|---|---|---|---|---|---|
| Tex. . . . | 1,666,626 | Minn. . . | 345,614 | Mich. . . | 182,889 |
| Iowa. . . | 1,293,062 | Ohio . . | 298,147 | W. Va. . | 181,988 |
| Kans. . . | 1,048,673 | Ky. . . . | 261,587 | Ariz. . . | 178,129 |
| Nebr. . . | 880,459 | Mont. . . | 260,700 | Oreg. . . | 156,713 |
| Mo . . . | 794,945 | Wyo . . | 254,530 | Pa. . . . | 150,310 |
| Okla. . . | 619,676 | Va. . . . | 233,894 | Miss . . | 146,507 |
| Cal . . . | 486,712 | Wis. . . . | 232,884 | Ark. . . . | 146,128 |
| Ill . . . . | 477,349 | Tenn. . . | 231,542 | Ala . . . | 141,092 |
| S. Dak. | 410,255 | Ind . . . | 231,018 | Ga. . . . | 140,928 |
| Colo . . | 356,242 | N. Mex. | 191,387 | N. Dak. | 130,193 |

STEERS AND BULLS (Continued)

| STATE | CENSUS 1910 |
|---|---|
| Fla. . . . | 121,907 |
| Nev. . . . | 121,683 |
| N. C. . . | 107,646 |
| La. . . . | 103,433 |
| N. Y. . . | 101,891 |
| Idaho . | 85,379 |
| Utah . . | 61,135 |
| Wash . | 44,831 |
| S. C. . . | 42,461 |
| Md . . . | 35,809 |
| Vt. . . . | 23,725 |
| Me . . . | 22,482 |
| Conn. . | 13,924 |
| N. H. . . | 13,843 |
| Mass. . . | 10,222 |
| N. J. . . | 8,126 |
| Del . . . | 3,368 |
| R. I. . . | 1,583 |
| East. . . | 3,420,042 |
| West. . . | 9,628,505 |
| U. S. . . | 13,048,547 |

Compare with map of dairy cows (map 69).



DAIRY COWS, NUMBER

| STATE | CENSUS 1910 | ESTIMATE JAN. 1, 1915 | STATE | CENSUS 1910 | ESTIMATE JAN. 1, 1915 | STATE | CENSUS 1910 | ESTIMATE JAN. 1, 1915 |
|---|---|---|---|---|---|---|---|---|
| N. Y. . . . | 1,509,594 | 1,509,000 | Kans. . . | 736,187 | 726,000 | Ala. . . . | 391,536 | 384,000 |
| Wis. . . . | 1,473,505 | 1,626,000 | Ind. . . . | 633,591 | 646,000 | S. Dak. | 369,764 | 453,000 |
| Iowa. . . | 1,406,792 | 1,377,000 | Nebr. . . | 613,952 | 625,000 | Va. . . . | 356,284 | 349,000 |
| Minn. . . | 1,085,308 | 1,106,000 | Okla. . . | 530,796 | 494,000 | N. C. . . | 308,914 | 315,000 |
| Ill. . . . | 1,050,223 | 1,007,000 | Cal. . . . | 467,332 | 541,000 | La. . . . | 279,097 | 268,000 |
| Tex. . . . | 1,013,867 | 1,006,000 | Miss. . . | 429,587 | 434,000 | Vt. . . . | 265,483 | 268,000 |
| Pa. . . . | 933,640 | 943,000 | Ark. . . . | 425,793 | 387,000 | N. Dak. | 259,173 | 339,000 |
| Ohio. . . | 905,125 | 895,000 | Ky. . . . | 409,834 | 390,000 | W. Va. . | 239,539 | 234,000 |
| Mo. . . . | 856,430 | 797,000 | Ga. . . . | 405,710 | 406,000 | Wash. . | 186,233 | 253,000 |
| Mich. . . | 787,003 | 814,000 | Tenn. . . | 397,104 | 355,000 | S. C. . . | 180,842 | 185,000 |

DAIRY COWS, NUMBER—Contd.

| STATE | CENSUS 1910 | ESTIMATE JAN. 1, 1915 |
|---|---|---|
| Oreg. . . | 172,550 | 210,000 |
| Mass. . . | 171,936 | 157,000 |
| Md. . . . | 167,716 | 177,000 |
| Me. . . . | 156,819 | 157,000 |

DAIRY COWS, NUMBER—Continued

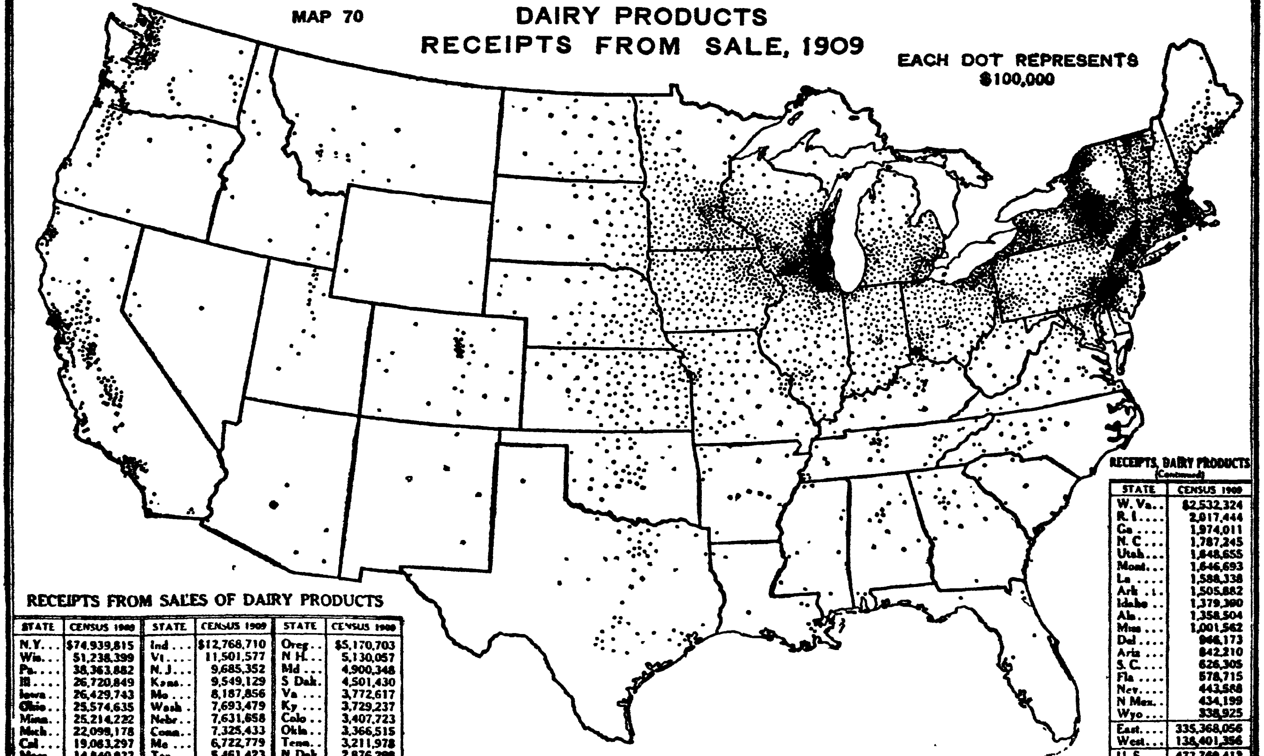
| STATE | CENSUS 1910 | ESTIMATE JAN. 1, 1915 |
|---|---|---|
| N. J. . . | 154,418 | 148,000 |
| Colo. . . | 144,734 | 205,000 |
| Conn. . . | 122,853 | 118,000 |
| Fla. . . . | 116,041 | 133,000 |
| N. H. . . | 101,278 | 95,000 |
| Idaho . . | 86,299 | 120,000 |
| Mont. . . | 77,527 | 114,000 |
| Utah. . . | 75,810 | 92,000 |
| N. Mex. | 51,451 | 68,000 |
| Del. . . . | 35,708 | 41,000 |
| Wyo. . . | 32,099 | 46,000 |
| Ariz. . . | 28,062 | 44,000 |
| R. I. . . . | 23,329 | 23,000 |
| Nev. . . . | 17,004 | 24,000 |
| East . . . | 11,707,692 | 11,807,000 |
| West . . | 8,917,740 | 9,455,000 |
| U. S. . . | 20,625,432 | 21,262,000 |

Compare with map of hay and forage (map 26).

MAP 70

## DAIRY PRODUCTS
## RECEIPTS FROM SALE, 1909

EACH DOT REPRESENTS
$100,000



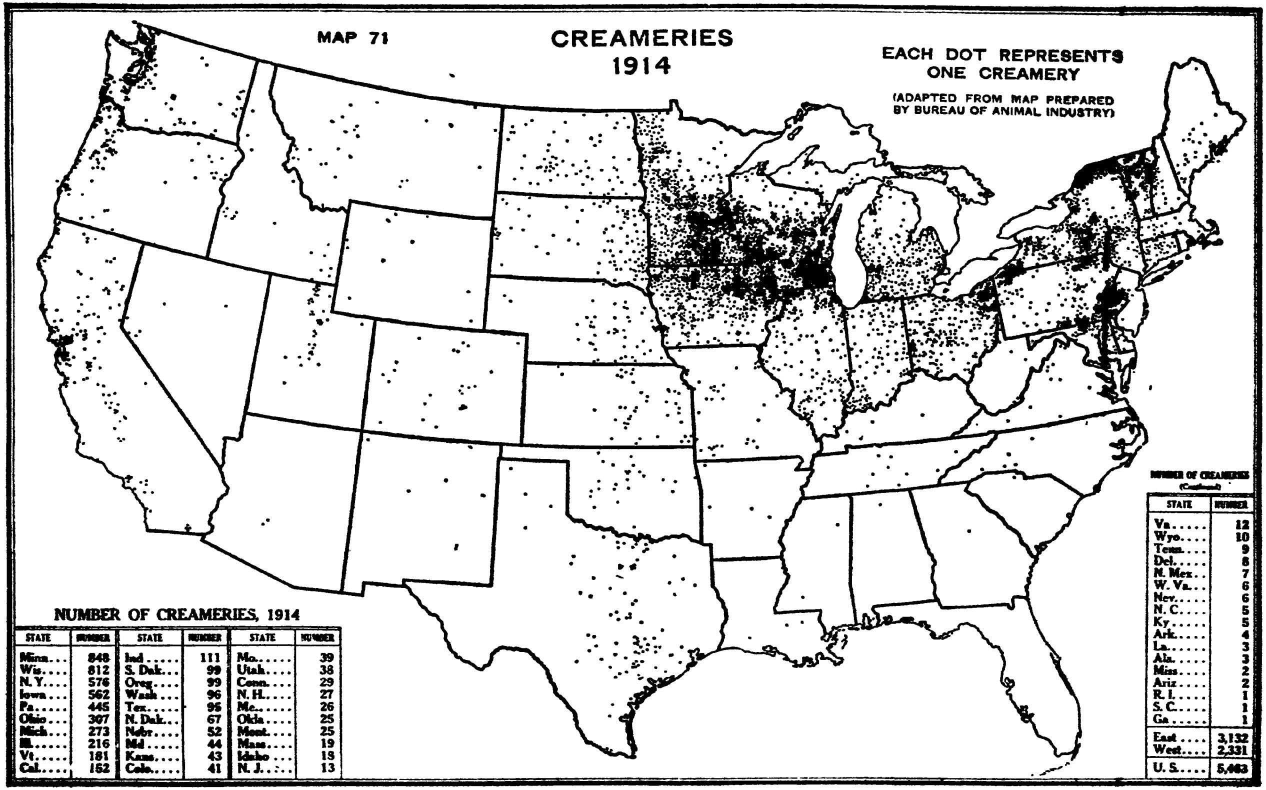
RECEIPTS FROM SALES OF DAIRY PRODUCTS

| STATE | CENSUS 1909 | STATE | CENSUS 1909 | STATE | CENSUS 1909 |
|---|---|---|---|---|---|
| N.Y. . . | $74,939,815 | Ind . . . | $12,768,710 | Oreg . . | $5,170,703 |
| Wis. . . | 51,238,399 | Vt . . . . | 11,501,577 | N H. . . | 5,130,057 |
| Pa. . . . | 38,363,882 | N. J. . . | 9,685,352 | Md . . . | 4,900,348 |
| Ill . . . . | 26,720,849 | Kans. . | 9,549,129 | S Dak. | 4,501,430 |
| Iowa . . | 26,429,743 | Mo . . . | 8,187,856 | Va . . . | 3,772,617 |
| Ohio . . | 25,574,635 | Wash . | 7,693,479 | Ky . . . | 3,729,237 |
| Minn. . | 25,214,222 | Nebr. . | 7,631,658 | Colo . . | 3,407,723 |
| Mich . . | 22,098,178 | Conn. . | 7,325,433 | Okla . . | 3,366,515 |
| Cal . . . | 19,063,297 | Me . . . | 6,722,779 | Tenn. . | 3,211,978 |
| Mass. . | 14,840,927 | Tex . . | 5,461,423 | N Dak | 2,876,298 |

RECEIPTS, DAIRY PRODUCTS
(Continued)

| STATE | CENSUS 1909 |
|---|---|
| W. Va. . | $2,532,324 |
| R. I. . . . | 2,017,444 |
| Ga . . . . | 1,974,011 |
| N. C . . . | 1,787,245 |
| Utah . . . | 1,848,655 |
| Mont. . . | 1,646,693 |
| La . . . . | 1,588,338 |
| Ark . . . | 1,505,882 |
| Idaho . . | 1,379,380 |
| Ala . . . . | 1,358,504 |
| Miss . . . | 1,001,562 |
| Del . . . . | 946,173 |
| Ariz . . . | 842,210 |
| S. C. . . . | 626,305 |
| Fla . . . . | 578,715 |
| Nev. . . . | 443,588 |
| N Mex. . | 434,199 |
| Wyo . . . | 338,925 |
| East. . . . | 335,368,056 |
| West. . . | 138,401,356 |
| U. S . . . | 473,769,412 |

Compare with map of dairy cows (map 69).



MAP 71

CREAMERIES
1914

EACH DOT REPRESENTS
ONE CREAMERY

(ADAPTED FROM MAP PREPARED
BY BUREAU OF ANIMAL INDUSTRY)

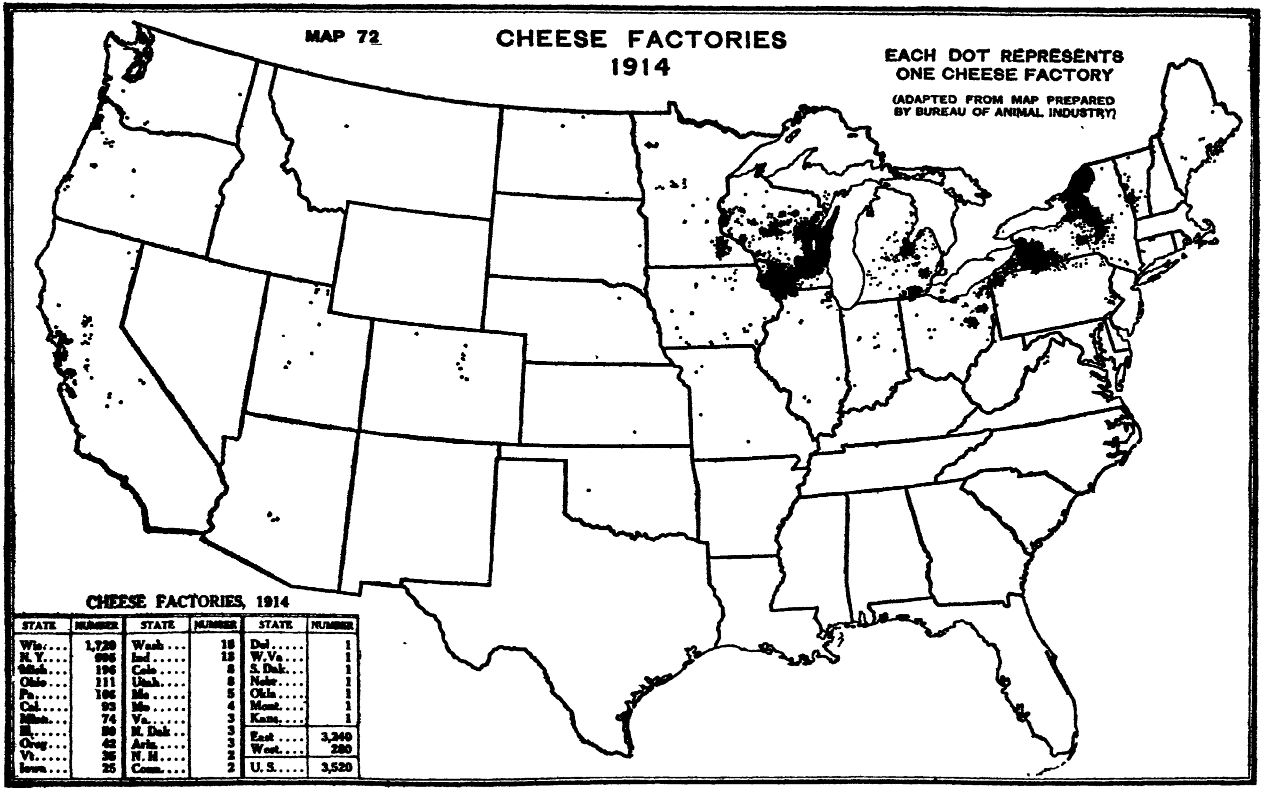
NUMBER OF CREAMERIES, 1914

| STATE | NUMBER | STATE | NUMBER | STATE | NUMBER |
|---|---|---|---|---|---|
| Minn. . . . | 848 | Ind . . . . . | 111 | Mo. . . . . . | 39 |
| Wis. . . . . | 812 | S. Dak. . . | 99 | Utah. . . . | 38 |
| N. Y. . . . . | 576 | Oreg. . . . . | 99 | Conn. . . . | 29 |
| Iowa . . . . | 562 | Wash . . . . | 96 | N. H. . . . . | 27 |
| Pa. . . . . . | 445 | Tex. . . . . . | 95 | Me.. . . . . . | 26 |
| Ohio . . . . | 307 | N. Dak. . . | 67 | Okla. . . . . | 25 |
| Mich. . . . | 273 | Nebr. . . . . | 52 | Mont. . . . . | 25 |
| Ill. . . . . . | 216 | Md . . . . . . | 44 | Mass. . . . | 19 |
| Vt. . . . . . | 181 | Kans. . . . . | 43 | Idaho . . . . | 18 |
| Cal. . . . . | 152 | Colo. . . . . | 41 | N. J. . . . . | 13 |

NUMBER OF CREAMERIES
(Continued)

| STATE | NUMBER |
|---|---|
| Va. . . . . . | 12 |
| Wyo. . . . . | 10 |
| Tenn. . . . | 9 |
| Del. . . . . . | 8 |
| N. Mex. . . | 7 |
| W. Va. . . . | 6 |
| Nev. . . . . . | 6 |
| N. C. . . . . . | 5 |
| Ky . . . . . . | 5 |
| Ark. . . . . . | 4 |
| La. . . . . . . | 3 |
| Ala. . . . . . | 3 |
| Miss . . . . . | 2 |
| Ariz . . . . . | 2 |
| R. I. . . . . . | 1 |
| S. C. . . . . . | 1 |
| Ga . . . . . . | 1 |
| East . . . . | 3,132 |
| West. . . . . | 2,331 |
| U. S. . . . . | 5,463 |

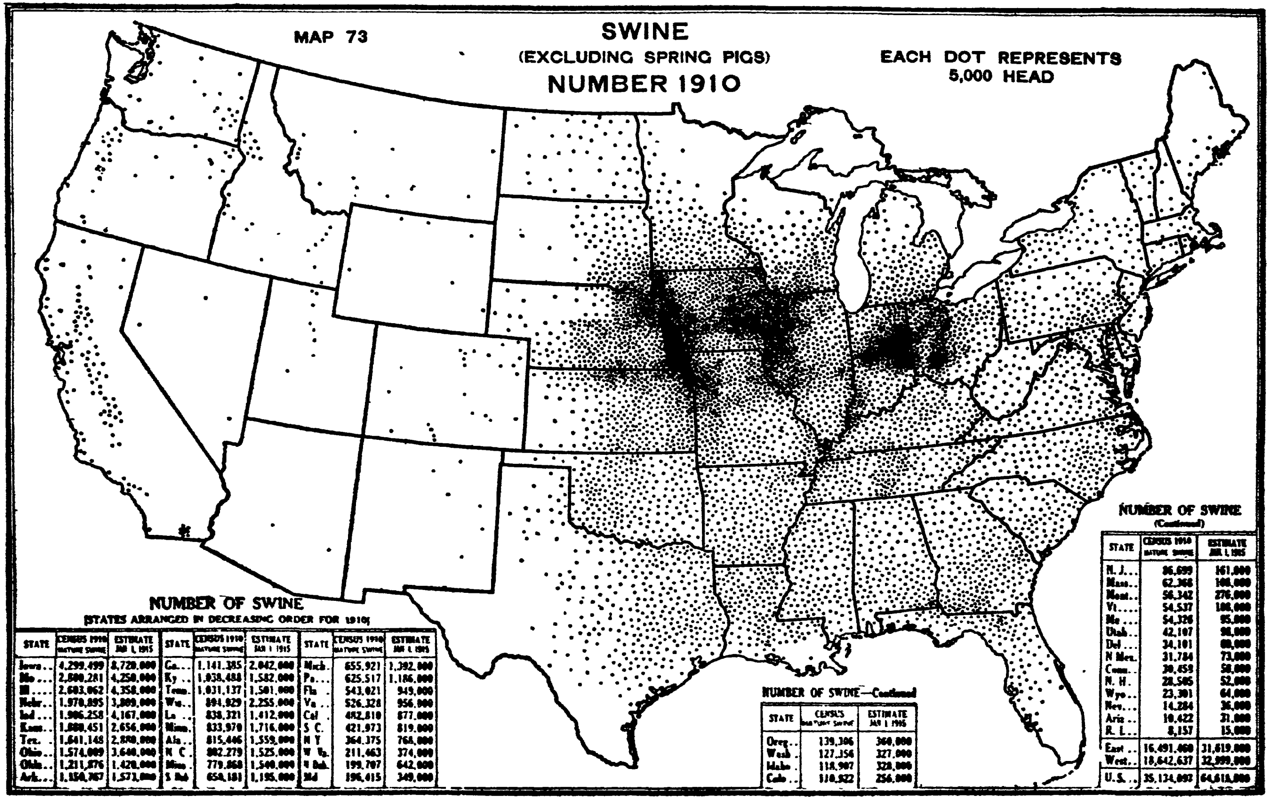
Compare with map of receipts from sale of dairy products (map 70).



CHEESE FACTORIES, 1914

| STATE | NUMBER | STATE | NUMBER | STATE | NUMBER |
|---|---|---|---|---|---|
| Wis.... | 1,720 | Wash... | 15 | Del..... | 1 |
| N.Y.... | 996 | Ind..... | 13 | W.Va... | 1 |
| Mich.... | 196 | Colo.... | 8 | S.Dak... | 1 |
| Ohio.... | 111 | Utah.... | 8 | Nebr.... | 1 |
| Pa...... | 106 | Me..... | 5 | Okla.... | 1 |
| Cal..... | 93 | Mo..... | 4 | Mont.... | 1 |
| Minn.... | 74 | Va...... | 3 | Kans.... | 1 |
| Ill...... | 50 | N.Dak... | 3 | East.... | 3,240 |
| Oreg.... | 42 | Ariz.... | 3 | West.... | 280 |
| Vt...... | 36 | N.H.... | 2 |  |  |
| Iowa.... | 25 | Conn.... | 2 | U.S..... | 3,520 |

Compare with map of creameries (map 71).



NUMBER OF SWINE

[STATES ARRANGED IN DECREASING ORDER FOR 1910]

| STATE | CENSUS 1910 MATURE SWINE | ESTIMATE JAN. 1, 1915 | STATE | CENSUS 1910 MATURE SWINE | ESTIMATE JAN. 1, 1915 | STATE | CENSUS 1910 MATURE SWINE | ESTIMATE JAN. 1, 1915 |
|---|---|---|---|---|---|---|---|---|
| Iowa.. | 4,299,499 | 8,720,000 | Ga... | 1,141,385 | 2,042,000 | Mich. | 655,921 | 1,392,000 |
| Mo... | 2,800,281 | 4,250,000 | Ky.. | 1,038,488 | 1,582,000 | Pa... | 625,517 | 1,186,000 |
| Ill.... | 2,603,062 | 4,358,000 | Tenn. | 1,031,137 | 1,501,000 | Fla. | 543,021 | 949,000 |
| Nebr.. | 1,970,895 | 3,809,000 | Wis.. | 894,929 | 2,255,000 | Va.. | 526,328 | 956,000 |
| Ind... | 1,906,258 | 4,167,000 | La.. | 838,321 | 1,412,000 | Cal. | 482,810 | 877,000 |
| Kans.. | 1,888,451 | 2,656,000 | Minn. | 833,970 | 1,716,000 | S. C. | 421,973 | 819,000 |
| Tex.. | 1,641,148 | 2,880,000 | Ala.. | 815,446 | 1,559,000 | N. Y. | 364,375 | 768,000 |
| Ohio.. | 1,574,009 | 3,640,000 | N. C. | 802,279 | 1,525,000 | W. Va. | 211,463 | 374,000 |
| Okla.. | 1,211,876 | 1,420,000 | Miss. | 779,868 | 1,540,000 | N. Dak. | 199,707 | 642,000 |
| Ark... | 1,150,767 | 1,573,000 | S. Dak. | 658,181 | 1,195,000 | Md. | 196,415 | 349,000 |

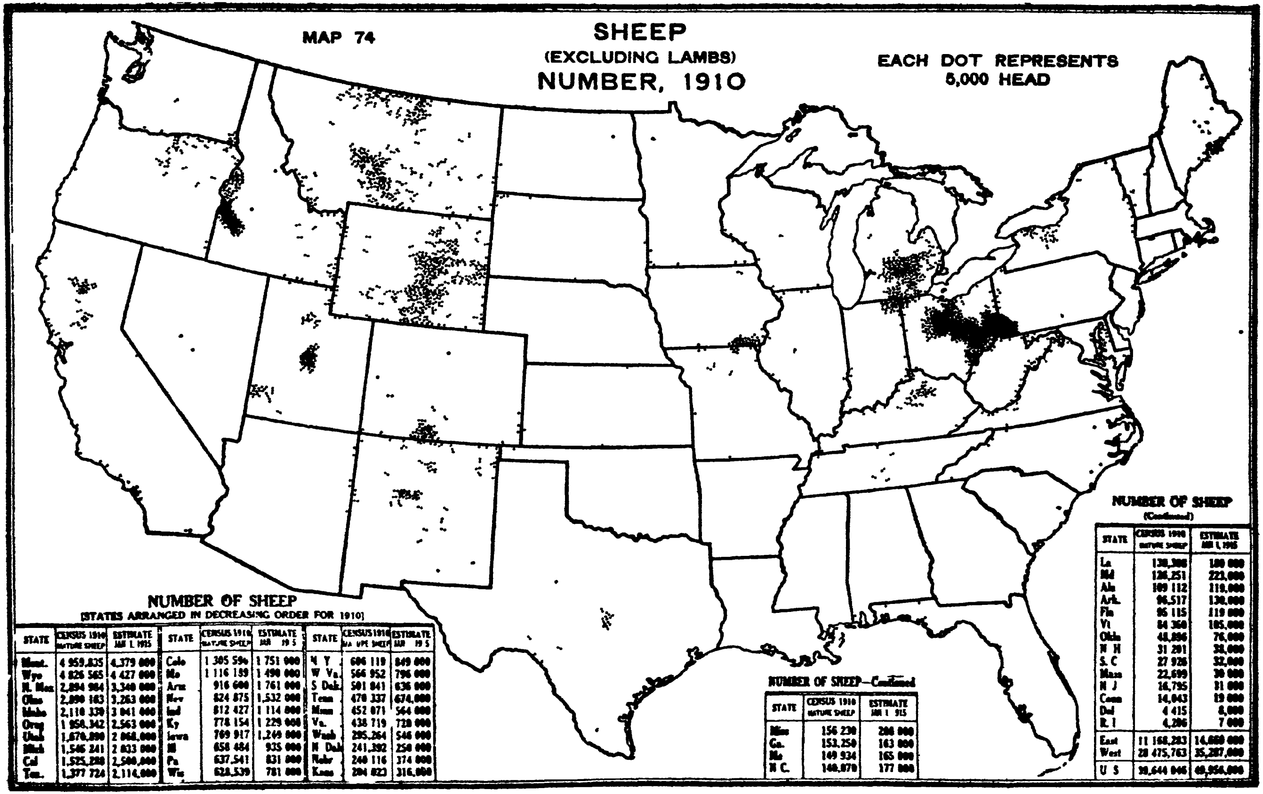
NUMBER OF SWINE—Continued

| STATE | CENSUS 1910 MATURE SWINE | ESTIMATE JAN. 1, 1915 |
|---|---|---|
| Oreg.. | 139,306 | 360,000 |
| Wash.. | 127,156 | 327,000 |
| Idaho. | 118,907 | 328,000 |
| Colo.. | 110,922 | 256,000 |

NUMBER OF SWINE (Continued)

| STATE | CENSUS 1910 MATURE SWINE | ESTIMATE JAN. 1, 1915 |
|---|---|---|
| N. J... | 86,699 | 161,000 |
| Mass.. | 62,368 | 108,000 |
| Mont.. | 56,342 | 276,000 |
| Vt.... | 54,537 | 108,000 |
| Me... | 54,326 | 95,000 |
| Utah.. | 42,107 | 98,000 |
| Del... | 34,101 | 60,000 |
| N. Mex. | 31,784 | 73,000 |
| Conn.. | 30,453 | 58,000 |
| N. H. | 28,505 | 52,000 |
| Wyo.. | 23,301 | 64,000 |
| Nev... | 14,284 | 36,000 |
| Ariz.. | 10,422 | 31,000 |
| R. I... | 8,157 | 15,000 |
| East.. | 16,491,460 | 31,619,000 |
| West.. | 18,642,637 | 32,999,000 |
| U. S... | 35,134,097 | 64,618,000 |

Compare with map of corn (map 14).



NUMBER OF SHEEP
[STATES ARRANGED IN DECREASING ORDER FOR 1910]

| STATE | CENSUS 1910 MATURE SHEEP | ESTIMATE JAN 1, 1915 | STATE | CENSUS 1910 MATURE SHEEP | ESTIMATE JAN 1, 1915 | STATE | CENSUS 1910 MATURE SHEEP | ESTIMATE JAN 1, 1915 |
|---|---|---|---|---|---|---|---|---|
| Mont. | 4 959,835 | 4,379 000 | Colo | 1 305 594 | 1 751 000 | N Y | 606 119 | 849 000 |
| Wyo | 4 826 565 | 4 427 000 | Mo | 1 116 153 | 1 490 000 | W Va. | 566 952 | 796 000 |
| N. Mex | 2,894 984 | 3,340 000 | Ariz | 916 600 | 1 761 000 | S Dak. | 501 041 | 636 000 |
| Ohio | 2,890 183 | 3,263 000 | Nev | 824 875 | 1,532 000 | Tenn | 470 337 | 674,000 |
| Idaho | 2,110 330 | 3 041 000 | Ind | 812 427 | 1 114 000 | Minn | 452 071 | 564 000 |
| Oreg | 1 950,342 | 2,563 000 | Ky | 778 154 | 1 229 000 | Va. | 438 719 | 728 000 |
| Utah | 1,670,890 | 2 068,000 | Iowa | 769 917 | 1,249 000 | Wash | 295,264 | 546 000 |
| Mich | 1,546 241 | 2 033 000 | Ill | 658 484 | 935 000 | N Dak | 241,392 | 250 000 |
| Cal | 1,525,280 | 2,500,000 | Pa | 637,541 | 831 000 | Nebr | 240 116 | 374 000 |
| Tex. | 1,377 724 | 2,114,000 | Wis | 628,539 | 781 000 | Kans | 204 023 | 316,000 |

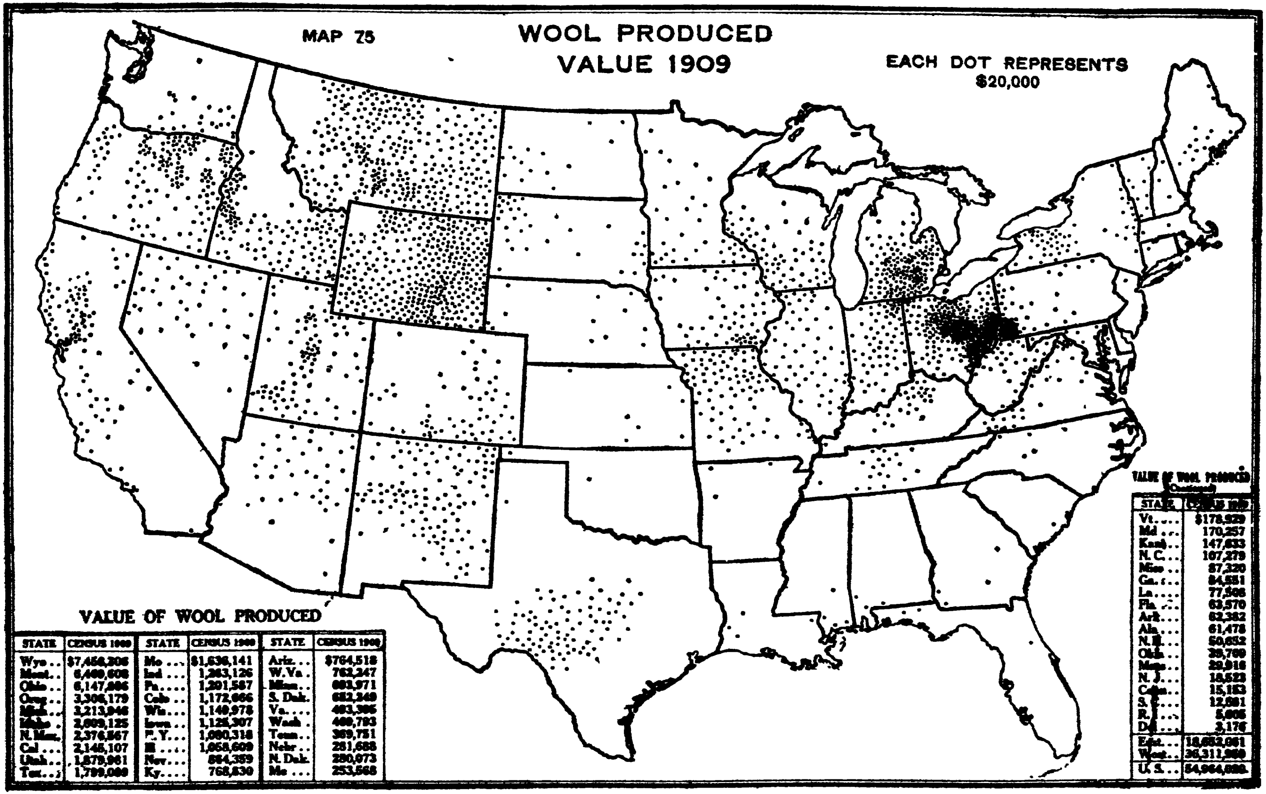
NUMBER OF SHEEP—*Continued*

| STATE | CENSUS 1910 MATURE SHEEP | ESTIMATE JAN 1, 1915 |
|---|---|---|
| Miss | 156 230 | 208 000 |
| Ga. | 153,250 | 163 000 |
| Me | 149 934 | 165 000 |
| N C. | 140,070 | 177 000 |

NUMBER OF SHEEP
(Continued)

| STATE | CENSUS 1910 MATURE SHEEP | ESTIMATE JAN 1, 1915 |
|---|---|---|
| La | 138,308 | 180 000 |
| Md | 126,251 | 223,000 |
| Ala | 109 112 | 118,000 |
| Ark. | 96,517 | 130,000 |
| Fla | 95 115 | 119 000 |
| Vt | 84 360 | 105,000 |
| Okla | 48,896 | 76,000 |
| N H | 31 201 | 38,000 |
| S. C | 27 926 | 32,000 |
| Mass | 22,699 | 30 000 |
| N J | 16,795 | 31 000 |
| Conn | 14,043 | 19 000 |
| Del | 4 415 | 6,000 |
| R. I | 4,206 | 7 000 |
| East | 11 168,283 | 14,669 000 |
| West | 28 475,763 | 35,287,000 |
| U S | 39,644 046 | 49,956,000 |

Compare with maps of swine (map 73) and total cattle (map 67)



VALUE OF WOOL PRODUCED

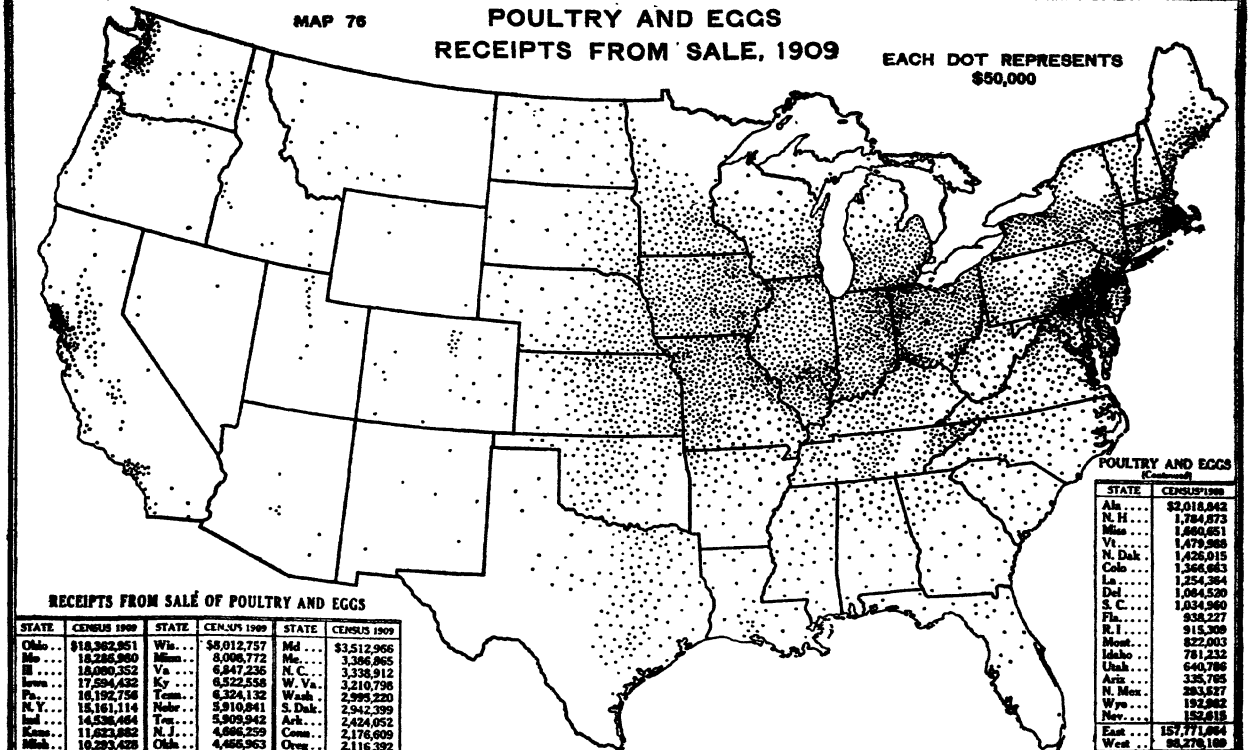
| STATE | CENSUS 1909 | STATE | CENSUS 1909 | STATE | CENSUS 1909 |
|---|---|---|---|---|---|
| Wyo . . | $7,456,306 | Mo . . . | $1,636,141 | Ariz. . . | $764,518 |
| Mont. . | 6,400,608 | Ind . . . | 1,263,126 | W. Va. . | 762,247 |
| Ohio . . | 6,147,886 | Pa. . . . | 1,201,587 | Minn. . . | 683,971 |
| Oreg. . . | 3,306,179 | Colo . . | 1,172,666 | S. Dak. | 682,249 |
| Mich. . . | 3,213,946 | Wis. . . . | 1,140,978 | Va. . . . | 483,395 |
| Idaho . | 2,609,125 | Iowa . . | 1,126,307 | Wash . | 460,793 |
| N. Mex. | 2,376,867 | N. Y. . . | 1,080,318 | Tenn . . | 369,751 |
| Cal . . . | 2,146,107 | Ill . . . . | 1,058,609 | Nebr . . | 261,688 |
| Utah . . | 1,879,961 | Nev. . . | 864,359 | N. Dak. | 260,073 |
| Tex. . . | 1,799,080 | Ky. . . . | 768,830 | Me . . . | 253,568 |

VALUE OF WOOL PRODUCED
(Continued)

| STATE | CENSUS 1909 |
|---|---|
| Vt. . . . . | $178,929 |
| Md . . . | 170,257 |
| Kans. . . | 147,633 |
| N. C. . . | 107,279 |
| Miss . . | 87,320 |
| Ga. . . . | 84,551 |
| La. . . . | 77,508 |
| Fla . . . | 63,570 |
| Ark. . . . | 62,382 |
| Ala. . . . | 61,478 |
| N. H. . . | 50,652 |
| Okla. . . | 38,709 |
| Mass. . . | 29,918 |
| N. J. . . . | 18,623 |
| Conn. . . | 15,183 |
| S. C. . . . | 12,981 |
| R. I. . . . | 5,905 |
| Del. . . . | 3,176 |
| East . . | 18,652,961 |
| West . . | 36,311,989 |
| U. S. . . | 54,964,886 |

Compare with map of sheep (map 74).

MAP 76



## POULTRY AND EGGS
## RECEIPTS FROM SALE, 1909

EACH DOT REPRESENTS $50,000

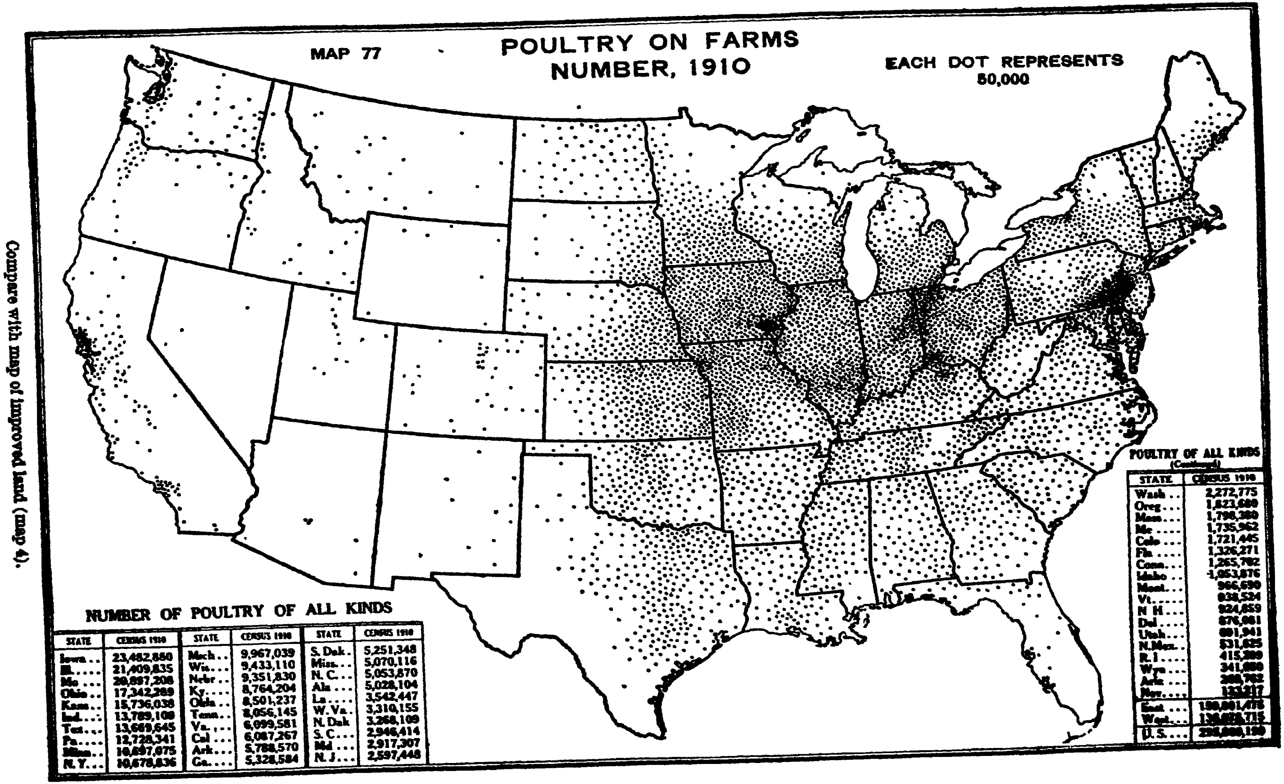
**RECEIPTS FROM SALE OF POULTRY AND EGGS**

| STATE | CENSUS 1909 | STATE | CENSUS 1909 | STATE | CENSUS 1909 |
|---|---|---|---|---|---|
| Ohio . . | $18,362,951 | Wis. . . | $8,012,757 | Md . . . | $3,512,966 |
| Mo . . . | 18,286,960 | Minn. . . | 8,006,772 | Me. . . . | 3,386,865 |
| Ill . . . . | 18,080,352 | Va . . . | 6,847,235 | N. C. . . | 3,338,912 |
| Iowa . . | 17,594,432 | Ky . . . | 6,522,558 | W. Va. . | 3,210,798 |
| Pa. . . . | 16,192,756 | Tenn. . . | 6,324,132 | Wash . | 2,995,220 |
| N. Y. . . | 15,161,114 | Nebr . . | 5,910,841 | S. Dak. | 2,942,399 |
| Ind . . . | 14,536,464 | Tex. . . | 5,909,942 | Ark. . . | 2,424,052 |
| Kans. . . | 11,623,882 | N. J. . . | 4,666,259 | Conn. . . | 2,176,609 |
| Mich. . . | 10,293,428 | Okla. . . | 4,456,963 | Oreg. . . | 2,116,392 |
| Cal . . . | 8,786,288 | Mass. . . | 4,282,564 | Ga . . . | 2,025,554 |

**POULTRY AND EGGS**
(Continued)

| STATE | CENSUS 1909 |
|---|---|
| Ala. . . . | $2,018,842 |
| N. H . . . | 1,784,873 |
| Miss . . . | 1,660,651 |
| Vt. . . . . | 1,479,968 |
| N. Dak . | 1,426,015 |
| Colo . . . | 1,366,663 |
| La . . . . . | 1,254,364 |
| Del . . . . | 1,064,520 |
| S. C. . . . | 1,034,960 |
| Fla. . . . . | 938,227 |
| R. I . . . . | 915,309 |
| Mont. . . . | 822,003 |
| Idaho . . | 781,232 |
| Utah . . . | 640,786 |
| Ariz . . . | 335,765 |
| N. Mex . | 283,527 |
| Wyo . . . | 192,962 |
| Nev. . . . | 152,615 |
| East . . . | 157,771,664 |
| West . . | 98,270,109 |
| U. S. . . . | 256,041,773 |

Compare with map of poultry (map 77).



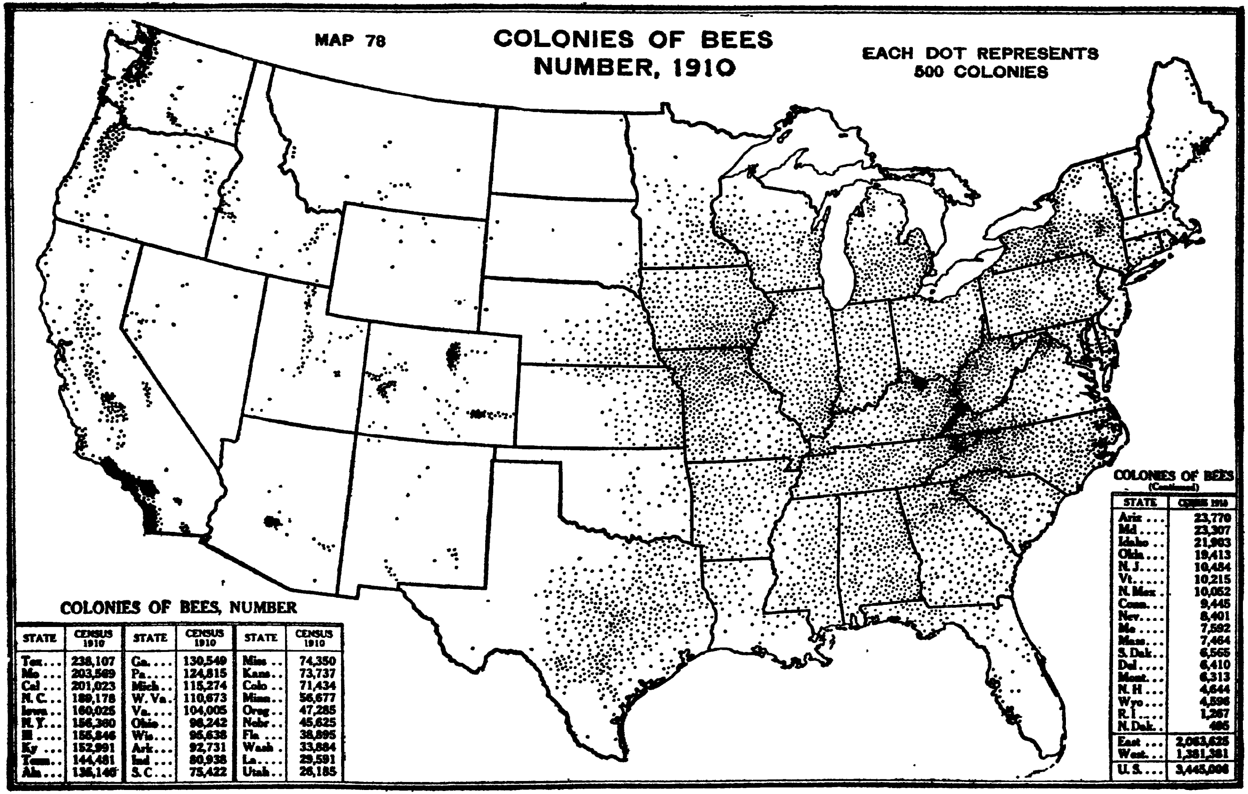
NUMBER OF POULTRY OF ALL KINDS

| STATE | CENSUS 1910 | STATE | CENSUS 1910 | STATE | CENSUS 1910 |
|---|---|---|---|---|---|
| Iowa . . | 23,482,880 | Mich . . | 9,967,039 | S. Dak . | 5,251,348 |
| Ill. . . . . | 21,409,835 | Wis. . . . | 9,433,110 | Miss. . . | 5,070,116 |
| Mo . . . | 20,897,208 | Nebr . . | 9,351,830 | N. C. . . | 5,053,870 |
| Ohio . . | 17,342,289 | Ky. . . . . | 8,764,204 | Ala . . . | 5,028,104 |
| Kans . . | 15,736,038 | Okla . . | 8,501,237 | La . . . . | 3,542,447 |
| Ind. . . . | 13,789,108 | Tenn. . . | 8,056,145 | W. Va. . | 3,310,155 |
| Tex. . . . | 13,669,645 | Va. . . . | 6,099,581 | N. Dak | 3,268,109 |
| Pa. . . . . | 12,728,341 | Cal . . . | 6,087,267 | S. C. . . | 2,946,414 |
| Minn. . . | 10,697,075 | Ark . . . | 5,788,570 | Md . . . | 2,917,307 |
| N. Y. . . | 10,678,836 | Ga. . . . | 5,328,584 | N. J. . . | 2,597,448 |

POULTRY OF ALL KINDS
(Continued)

| STATE | CENSUS 1910 |
|---|---|
| Wash . . | 2,272,775 |
| Oreg . . . | 1,823,080 |
| Mass . . . | 1,798,380 |
| Me . . . . | 1,735,962 |
| Colo . . . | 1,721,445 |
| Fla . . . . | 1,326,271 |
| Conn. . . | 1,265,702 |
| Idaho . . | 1,053,876 |
| Mont. . . | 966,690 |
| Vt. . . . . | 938,524 |
| N. H. . . . | 924,859 |
| Del . . . . | 876,081 |
| Utah . . . | 801,941 |
| N. Mex. . | 531,625 |
| R. I . . . . | 415,380 |
| Wyo . . . | 341,080 |
| Ariz . . . | 288,762 |
| Nev. . . . | 133,217 |
| East . . . | 159,851,475 |
| West . . . | 136,028,715 |
| U. S. . . . | 295,880,190 |

Compare with map of improved land (map 4).



MAP 78

COLONIES OF BEES
NUMBER, 1910

EACH DOT REPRESENTS
500 COLONIES

COLONIES OF BEES, NUMBER

| STATE | CENSUS 1910 | STATE | CENSUS 1910 | STATE | CENSUS 1910 |
|---|---|---|---|---|---|
| Tex... | 238,107 | Ga.... | 130,549 | Miss.. | 74,350 |
| Mo... | 203,569 | Pa.... | 124,815 | Kans.. | 73,737 |
| Cal... | 201,023 | Mich.. | 115,274 | Colo.. | 71,434 |
| N. C... | 189,178 | W. Va.. | 110,673 | Minn.. | 56,677 |
| Iowa.. | 160,025 | Va.... | 104,005 | Oreg.. | 47,285 |
| N. Y... | 156,380 | Ohio.. | 98,242 | Nebr.. | 45,625 |
| Ill.... | 155,846 | Wis... | 96,638 | Fla... | 38,895 |
| Ky... | 152,991 | Ark... | 92,731 | Wash. | 33,884 |
| Tenn.. | 144,481 | Ind... | 80,938 | La.... | 29,591 |
| Ala... | 136,146 | S. C... | 75,422 | Utah.. | 26,185 |

COLONIES OF BEES
(Continued)

| STATE | CENSUS 1910 |
|---|---|
| Ariz... | 23,770 |
| Md.... | 23,307 |
| Idaho.. | 21,903 |
| Okla.... | 19,413 |
| N. J.... | 10,484 |
| Vt..... | 10,215 |
| N. Mex. | 10,052 |
| Conn... | 9,445 |
| Nev.... | 8,401 |
| Me.... | 7,592 |
| Mass... | 7,464 |
| S. Dak.. | 6,565 |
| Del.... | 6,410 |
| Mont... | 6,313 |
| N. H... | 4,644 |
| Wyo... | 4,596 |
| R. I.... | 1,267 |
| N. Dak.. | 405 |
| East... | 2,063,625 |
| West... | 1,381,381 |
| U. S.... | 3,445,006 |

Compare with map of poultry (map 77).

# APPENDIX.

## AGRICULTURAL COLLEGES IN THE UNITED STATES.[1]

College instruction in agriculture is given in the colleges and universities receiving the benefits of the acts of Congress of July 2, 1862, August 30, 1890, and March 4, 1907, which are now in operation in all the States and Territories except Alaska. The total number of these institutions is 69, of which 66 maintain courses of instruction in agriculture. In 23 States the agricultural colleges are departments of the States universities. In 16 States and Territories separate institutions having courses in agriculture are maintained for the colored race. All of the agricultural colleges for white persons and several of those for negroes offer four-year courses in agriculture and its related sciences leading to bachelors' degrees, and many provide for graduate study. About 60 of these institutions also provide special, short, or correspondence courses in the different branches of agriculture, including agronomy, horticulture, animal husbandry, poultry raising, cheese making, dairying, sugar making, rural engineering, farm mechanics, and other technical subjects. Officers of the agricultural colleges engage quite largely in conducting farmers' institutes and various other forms of college extension. The agricultural experiment stations, with very few exceptions, are departments of the agricultural colleges. The total number of persons engaged in the work of education and research in the land-grant colleges and the experiment stations in 1915 was 7,930, the number of students (white) in interior courses in the colleges of agriculture and mechanic arts, 64,578; the total number of students in the whole institutions, 114,820; [2] the number of students (white) in the four-year college courses in agriculture, 17,153; the total number of students in the institutions for negroes, 10,170, of whom 2,368 were enrolled in agricultural courses. With a few exceptions, each of these colleges offers free tuition to residents of the State in which it is located. In the excepted cases scholarships are open to promising and energetic students, and in all opportunities are found for some to earn part of their expenses by their own labor. The expenses are from $125 to $300 for the school year.

*Agricultural colleges in the United States.*

| State or Territory. | Name of institution. | Location. | President. |
|---|---|---|---|
| Alabama | Alabama Polytechnic Institute | Auburn. | C. C. Thach. |
| | Agricultural School of the Tuskegee Normal and Industrial Institute. | Tuskegee Institute | R. R. Moton[3],[4]. |
| | Agricultural and Mechanical College for Negroes. | Normal | W. S. Buchanan. |
| Arizona | College of Agriculture of the University of Arizona. | Tucson | R. H. Forbes.[5] |
| Arkansas | College of Agriculture of the University of Arkansas. | Fayetteville | Martin Nelson.[5] |
| | Branch Normal College | Pine Bluff | J. G. Ish, jr. |
| California | College of Agriculture of the University of California. | Berkeley | T. F. Hunt.[5] |
| Colorado | The State Agricultural College of Colorado. | Fort Collins | C. A. Lory. |
| Connecticut | Connecticut Agricultural College | Storrs | C. L. Beach. |
| Delaware | Delaware College | Newark | S. C. Mitchell. |
| | State College for Colored Students | Dover | W. C. Jason. |

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[1] Including only institutions established under the land-grant act of July 2, 1862.
[2] Not including students in correspondence courses and extension schools.
[3] Principal.
[4] Assumes duties May, 1916.
[5] Dean.

*Agricultural colleges in the United States*—Continued.

| State or Territory. | Name of institution. | Location. | President. |
|---|---|---|---|
| Florida | College of Agriculture of the University of Florida. | Gainesville | P. H. Rolfs.[1] |
| | Florida Agricultural and Mechanical College for Negroes. | Tallahassee | N. B. Young. |
| Georgia | Georgia State College of Agriculture | Athens | A. M. Soule. |
| | Georgia State Industrial College | Savannah | R. R. Wright. |
| Hawaii | College of Hawaii | Honolulu | A. L. Dean. |
| Idaho | College of Agriculture of the University of Idaho. | Moscow | E. J. Iddings.[1] |
| Illinois | College of Agriculture of the University of Illinois. | Urbana | E. Davenport.[1] |
| Indiana | School of Agriculture of Purdue University. | La Fayette | J. H. Skinner.[1] |
| Iowa | Iowa State College of Agriculture and Mechanic Arts. | Ames | R. A. Pearson. |
| Kansas | Kansas State Agricultural College | Manhattan | H. J. Waters. |
| Kentucky | The College of Agriculture of the State University. | Lexington | J. H. Kastle.[1] |
| | The Kentucky Normal and Industrial Institute for Colored Persons. | Frankfort | G. P. Russell. |
| Louisiana | Louisiana State University and Agricultural and Mechanical College. | Baton Rouge | T. D. Boyd. |
| | Southern University and Agricultural and Mechanical College of the State of Louisiana. | Scotland Heights, Baton Rouge. | J. S. Clark. |
| Maine | College of Agriculture of the University of Maine. | Orono | L. S. Merrill.[1] |
| Maryland | Maryland Agricultural College | College Park | H. J. Patterson. |
| | Princess Anne Academy, Eastern Branch of the Maryland Agricultural College. | Princess Anne | T. H. Kiah.[2] |
| Massachusetts | Massachusetts Agricultural College | Amherst | K. L. Butterfield. |
| | Massachusetts Institute of Technology [3] | Boston | R. C. Maclaurin. |
| Michigan | Michigan Agricultural College | East Lansing | F. S. Kedzie.[4] |
| Minnesota | College of Agriculture of the University of Minnesota. | University Farm, St. Paul. | A. F. Woods.[1] |
| Mississippi | Mississippi Agricultural and Mechanical College. | Agricultural College. | G. R. Hightower. |
| | Alcorn Agricultural and Mechanical College. | Alcorn | L. J. Rowan. |
| Missouri | College of Agriculture of the University of Missouri. | Columbia | F. B. Mumford.[1] |
| | School of Mines and Metallurgy of the University of Missouri.[3] | Rolla | Durward Copeland.[5] |
| | Lincoln Institute | Jefferson City | B. F. Allen. |
| Montana | Montana State College of Agriculture and Mechanic Arts. | Bozeman | Jas. M. Hamilton. |
| Nebraska | College of Agriculture of the University of Nebraska. | Lincoln | E. A. Burnett.[1] |
| Nevada | College of Agriculture of the University of Nevada. | Reno | C. S. Knight.[1] |
| New Hampshire. | New Hampshire College of Agriculture and the Mechanic Arts. | Durham | E. T. Fairchild. |
| New Jersey | Rutgers College (the New Jersey State College for the Benefit of Agriculture and the Mechanic Arts). | New Brunswick | W. H. S. Demarest |
| New Mexico | New Mexico College of Agriculture and Mechanic Arts. | State College | George E. Ladd. |
| New York | New York State College of Agriculture | Ithaca | B. T. Galloway.[1] |
| North Carolina | The North Carolina College of Agriculture and Mechanic Arts. | West Raleigh | D. H. Hill. |
| | Negro Agricultural and Technical College. | Greensboro | J. B. Dudley. |
| North Dakota | North Dakota Agricultural College | Agricultural College. | J. H. Worst. |
| Ohio | College of Agriculture of Ohio State University. | Columbus | Alfred Vivian.[1] |
| Oklahoma | Oklahoma Agricultural and Mechanical College. | Stillwater | J. M. Cantwell. |
| | Agricultural and Normal University | Langston | I. E. Page. |
| Oregon | Oregon State Agricultural College | Corvallis | W. J. Kerr. |
| Pennsylvania | The School of Agriculture of the Pennsylvania State College. | State College | R. L. Watts.[1] |
| Porto Rico | College of Agriculture and Mechanic Arts of the University of Porto Rico. | Mayaguez | R. S. Garwood.[1] |
| Rhode Island | Rhode Island State College | Kingston | Howard Edwards. |
| South Carolina | The Clemson Agricultural College of South Carolina. | Clemson College | W. M. Riggs. |
| | State Agricultural and Mechanical College of South Carolina. | Orangeburg | R. S. Wilkinson. |
| South Dakota | South Dakota State College of Agriculture and Mechanic Arts. | Brookings | E. C. Perisho. |

[1] Dean.

[2] Principal.

[3] Does not maintain courses in agriculture.

[4] Acting president.

[5] Director.

*Agricultural colleges in the United States*—Continued.

| State or Territory. | Name of institution. | Location. | President. |
|---|---|---|---|
| Tennessee | College of Agriculture, University of Tennessee. | Knoxville | Brown Ayres. |
| | Tennessee Agricultural and Industrial State Normal School. | Nashville | W. J. Hale. |
| Texas | Agricultural and Mechanical College of Texas. | College Station | W. B. Bizzell. |
| | Prairie View State Normal and Industrial College. | Prairie View | E. L. Blackshear.[1] |
| Utah | The Agricultural College of Utah | Logan | J. A. Widtsoe. |
| Vermont | College of Agriculture of the University of Vermont. | Burlington | J. L. Hills.[2] |
| Virginia | The Virginia Agricultural and Mechanical College and Polytechnic Institute. | Blacksburg | J. D. Eggleston. |
| | The Hampton Normal and Agricultural Institute. | Hampton | H. B. Frissell.[1] |
| Washington | State College of Washington | Pullman | E. O. Holland. |
| West Virginia | College of Agriculture of West Virginia University. | Morgantown | J. L. Coulter.[2] |
| | The West Virginia Collegiate Institute | Institute | Byrd Prillerman. |
| Wisconsin | College of Agriculture of the University of Wisconsin. | Madison | H. L. Russell.[2] |
| Wyoming | College of Agriculture, University of Wyoming. | Laramie | H. G. Knight.[2] |

[1] Principal.

[2] Dean.

## AGRICULTURAL EXPERIMENT STATIONS OF THE UNITED STATES, THEIR LOCATIONS AND DIRECTORS.

Alabama (College), Auburn: J. F. Duggar.
Alabama (Canebrake), Uniontown: L. H. Moore.
Alabama (Tuskegee), Tuskegee Institute: G. W. Carver.
Alaska, Sitka (Rampart, Kodiak, and Fairbanks): C. C. Georgeson.[1]
Arizona, Tucson: R. H. Forbes.
Arkansas, Fayetteville: Martin Nelson.
California, Berkeley: T. F. Hunt.
Colorado, Fort Collins: C. P. Gillette.
Connecticut (State), New Haven
Connecticut (Storrs), Storrs..... } E. H. Jenkins.
Delaware, Newark: Harry Hayward.
Florida, Gainesville: P. H. Rolfs.
Georgia, Experiment: R. J. H. DeLoach.
Guam:[2] A. C. Hartenbower.[1]
Hawaii (Federal), Honolulu: J. M. Westgate.[1]
Hawaii (Sugar Planters'), Honolulu: H. P. Agee.
Idaho, Moscow: J. S. Jones.
Illinois, Urbana: E. Davenport.
Indiana, La Fayette: Arthur Goss.
Iowa, Ames: C. F. Curtiss.
Kansas, Manhattan: W. M. Jardine.
Kentucky, Lexington: J. H. Kastle.
Louisiana (Sugar), New Orleans
Louisiana (State), Baton Rouge
Louisiana (North), Calhoun.... } W. R. Dodson.
Louisiana (Rice), Crowley......
Maine, Orono: C. D. Woods.
Maryland, College Park: H. J. Patterson.
Massachusetts, Amherst: W. P. Brooks.
Michigan, East Lansing: R. S. Shaw.
Minnesota, University Farm, St. Paul: A. F. Woods.
Mississippi, Agricultural College: E. R. Lloyd.
Missouri (College), Columbia: F. B. Mumford.
Missouri (Fruit), Mountain Grove: Paul Evans.
Montana, Bozeman: F. B. Linfield.
Nebraska, Lincoln: E. A. Burnett.
Nevada, Reno: S. B. Doten.
New Hampshire, Durham: J. C. Kendall.
New Jersey (State), New Brunswick
New Jersey (College), New Brunswick } J. G. Lipman.
New Mexico, State College: Fabian Garcia.
New York (State), Geneva: W. H. Jordan.
New York (Cornell), Ithaca: B. T. Galloway.
North Carolina, Raleigh and West Raleigh: B. W. Kilgore.
North Dakota, Agricultural College: T. P. Cooper.
Ohio, Wooster: C. E. Thorne.
Oklahoma, Stillwater: W. L. Carlyle.
Oregon, Corvallis: A. B. Cordley.
Pennsylvania, State College: R. L. Watts.
Pennsylvania (Institute of Animal Nutrition), State College: H. P. Armsby.
Porto Rico (Federal), Mayaguez: D. W. May.[1]
Porto Rico (Insular), Rio Piedras: W. V. Tower.
Rhode Island, Kingston: B. L. Hartwell.
South Carolina, Clemson College: J. N. Harper.
South Dakota, Brookings: J. W. Wilson.
Tennessee, Knoxville: H. A. Morgan.
Texas, College Station: B. Youngblood.
Utah, Logan: E. D. Ball.
Vermont, Burlington: J. L. Hills.
Virginia (College), Blacksburg: W. J. Schoene.[3]
Virginia (Truck), Norfolk: T. C. Johnson.
Washington, Pullman: I. D. Cardiff.
West Virginia, Morgantown: J. L. Coulter.
Wisconsin, Madison: H. L. Russell.
Wyoming, Laramie: H. G. Knight.

[1] Agronomist in charge.

[2] Address: Island of Guam, via San Francisco.

[3] Acting director.

## STATE OFFICIALS IN CHARGE OF AGRICULTURE.

Alabama: Commissioner of Agriculture, Montgomery.
Alaska: Agronomist in charge of Experiment Stations, Sitka.
Arizona: Director of Experiment Station, Tucson.
Arkansas: Commissioner of Agriculture, Little Rock.
California: Secretary of State Board of Agriculture, Sacramento.
Colorado: Secretary of State Board of Agriculture, Fort Collins.
Connecticut: Secretary of State Board of Agriculture, Hartford.
Delaware: Secretary of State Board of Agriculture, Dover.
Florida: Commissioner of Agriculture, Tallahassee.
Georgia: Commissioner of Agriculture, Atlanta.
Guam: Agronomist in charge of Experiment Station, Guam.
Hawaii: Secretary of Territorial Board of Agriculture, Honolulu.
Idaho: Commissioner of Immigration, Labor, and Statistics, Boise.
Illinois: Secretary of State Board of Agriculture, Springfield.
Indiana: Secretary of State Board of Agriculture, Indianapolis.
Iowa: Secretary of State Board of Agriculture, Des Moines.
Kansas: Secretary of State Board of Agriculture, Topeka.
Kentucky: Commissioner of Agriculture, Frankfort.
Louisiana: Commissioner of Agriculture, Baton Rouge.
Maine: Commissioner of Agriculture, Augusta.
Maryland: Director of Experiment Station, College Park.
Massachusetts: Secretary of State Board of Agriculture, Boston.
Michigan: Secretary of State Board of Agriculture, East Lansing.
Minnesota: Secretary of State Agricultural Society, St. Paul.
Mississippi: Commissioner of Agriculture, Jackson.
Missouri: Secretary of State Board of Agriculture, Columbia.
Montana: Commissioner of Agriculture and Publicity, Helena.
Nebraska: Secretary of State Board of Agriculture, Lincoln.
Nevada: Secretary of State Board of Agriculture, Carson City.
New Hampshire: Secretary of State Board of Agriculture, Concord.
New Jersey: Secretary of State Board of Agriculture, Trenton.
New Mexico: Director of Experiment Station, State College.
New York: Commissioner of Agriculture, Albany.
North Carolina: Commissioner of Agriculture, Raleigh.
North Dakota: Commissioner of Agriculture, Bismarck.
Ohio: Secretary of State Board of Agriculture, Columbus.
Oklahoma: Commissioner of Agriculture, Oklahoma.
Oregon: Secretary of State Board of Agriculture, Salem.
Pennsylvania: Commissioner of Agriculture, Harrisburg.
Philippine Islands: Director of Agriculture, Manila.
Porto Rico: President Board of Commissioners of Agriculture, Rio Piedras.
Rhode Island: Secretary of State Board of Agriculture, Providence.
South Carolina: Commissioner of Agriculture, Columbia.
South Dakota: Secretary of State Board of Agriculture, Huron.
Tennessee: Commissioner of Agriculture, Nashville.
Texas: Commissioner of Agriculture, Austin.
Utah: Director of Experiment Station, Logan.
Vermont: Commissioner of Agriculture, Montpelier.
Virginia: Commissioner of Agriculture, Richmond.
Washington: Commissioner of Agriculture, Olympia.
West Virginia: Commissioner of Agriculture, Charleston.
Wisconsin: Commissioner of Agriculture, Madison.
Wyoming: Director of Experiment Station, Laramie.

## STATE OFFICERS IN CHARGE OF COOPERATIVE AGRICULTURAL EXTENSION WORK.

Alabama: J. F. Duggar, Alabama Polytechnic Institute, Auburn.
Arizona: S. F. Morse, College of Agriculture, University of Arizona, Tucson.
Arkansas: J. H. Miller, College of Agriculture, University of Arkansas, Fayetteville.
California: W. T. Clarke, College of Agriculture, University of California, Berkeley.
Colorado: H. T. French, State Agricultural College of Colorado, Fort Collins.
Connecticut: H. J. Baker, Connecticut Agricultural College, Storrs.
Delaware: H. Hayward, Delaware College, Newark.
Florida: P. H. Rolfs, College of Agriculture, University of Florida, Gainesville.
Georgia: J. Phil Campbell, Georgia State College of Agriculture, Athens.
Idaho: O. D. Center, College of Agriculture, University of Idaho. (Boise.)
Illinois: W. F. Handschin, College of Agriculture, University of Illinois, Urbana.
Indiana: G. I. Christie, Purdue University, La Fayette.
Iowa: R. K. Bliss, Iowa State College, Ames.
Kansas: E. C. Johnson, Kansas State Agricultural College, Manhattan.

**Kentucky:** Fred Mutchler, College of Agriculture, State University, Lexington.

**Louisiana:** W. R. Dodson, Louisiana State University and Agricultural and Mechanical College, Baton Rouge.

**Maine:** L. S. Merrill, College of Agriculture, University of Maine, Orono.

**Maryland:** T. B. Symons, Maryland Agricultural College, College Park.

**Massachusetts:** W. D. Hurd, Massachusetts Agricultural College, Amherst.

**Michigan:** R. J. Baldwin, Michigan Agricultural College, East Lansing.

**Minnesota:** A. D. Wilson, College of Agriculture, University of Minnesota, University Farm, St. Paul.

**Mississippi:** E. R. Lloyd, Mississippi Agricultural and Mechanical College, Agricultural College.

**Missouri:** A. J. Meyer, College of Agriculture, University of Missouri, Columbia.

**Montana:** F. S. Cooley, Montana State College of Agriculture and Mechanic Arts, Bozeman.

**Nebraska:** C. W. Pugsley, College of Agriculture, University of Nebraska, Lincoln.

**Nevada:** C. A. Norcross, College of Agriculture, University of Nevada, Reno.

**New Hampshire:** J. C. Kendall, New Hampshire College of Agriculture and Mechanic Arts, Durham.

**New Jersey:** Alva Agee, Rutgers College, New Brunswick.

**New Mexico:** A. C. Cooley, New Mexico College of Agriculture and Mechanic Arts, State College.

**New York:** B. T. Galloway, New York State College of Agriculture, Ithaca.

**North Carolina:** B. W. Kilgore, North Carolina College of Agriculture and Mechanic Arts, West Raleigh.

**North Dakota:** T. P. Cooper, North Dakota Agricultural College, Agricultural College.

**Ohio:** C. S. Wheeler, College of Agriculture, Ohio State University, Columbus.

**Oklahoma:** W. D. Bentley, Oklahoma Agricultural and Mechanical College, Stillwater.

**Oregon:** R. D. Hetzel, Oregon State Agricultural College, Corvallis.

**Pennsylvania:** M. S. McDowell, Pennsylvania State College, State College.

**Rhode Island:** A. E. Stene, Rhode Island State College, Kingston.

**South Carolina:** W. W. Long, Clemson Agricultural College of South Carolina, Clemson College.

**South Dakota:** G. W. Randlett, South Dakota State College, Brookings.

**Tennessee:** C. A. Keffer, College of Agriculture, University of Tennessee, Knoxville.

**Texas:** Clarence Ousley, Agricultural and Mechanical College of Texas, College Station.

**Utah:** E. G. Peterson, Agricultural College of Utah, Logan.

**Vermont:** Thos. Bradlee, College of Agriculture, University of Vermont, Burlington.

**Virginia:** J. D. Eggleston, Virginia Polytechnic Institute, Blacksburg.

**Washington:** W. S. Thornber, State College of Washington, Pullman.

**West Virginia:** C. R. Titlow, College of Agriculture, West Virginia University, Morgantown.

**Wisconsin:** K. L. Hatch, College of Agriculture, University of Wisconsin, Madison.

**Wyoming:** A. E. Bowman, College of Agriculture, University of Wyoming, Laramie.

## STATISTICS OF THE PRINCIPAL CROPS.

[Figures furnished by the Bureau of Crop Estimates, Department of Agriculture, except where otherwise stated. All prices on gold basis.]

NOTE.—In all the following tables the figures for the latest year are subject to revision.

### CORN.

TABLE 1.—*Corn: Area and production of undermentioned countries, 1913–1915.*

| Country. | Area. | | | Production. | | |
|---|---|---|---|---|---|---|
| | 1913 | 1914 | 1915 | 1913 | 1914 | 1915 |
| NORTH AMERICA. | *Acres.* | *Acres.* | *Acres.* | *Bushels.* | *Bushels.* | *Bushels.* |
| United States | 105,820,000 | 103,435,000 | 108,321,000 | 2,446,988,000 | 2,672,804,000 | 3,054,535,000 |
| Canada: | | | | | | |
| Ontario | 260,000 | 239,000 | 237,000 | 16,182,000 | 13,410,000 | 14,149,000 |
| Quebec | 18,000 | 17,000 | 16,000 | 586,000 | 514,000 | 445,000 |
| Other | (1) | (1) | ........ | 5,000 | ........ | ........ |
| Total Canada | 278,000 | 256,000 | 253,000 | 16,773,000 | 13,924,000 | 14,594,000 |
| Mexico | [2] 6,093,000 | 4,748,000 | (3) | [2] 82,519,000 | 78,443,000 | 60,000,000 |
| Total | ........ | ........ | ........ | 2,546,280,000 | 2,765,171,000 | 3,129,129,000 |
| SOUTH AMERICA. | | | | | | |
| Argentina | 9,464,000 | 10,260,000 | 10,386,000 | 196,642,000 | 263,135,000 | 338,235,000 |
| Chile | 65,000 | 59,000 | (3) | 1,647,000 | 1,505,000 | 1,822,000 |
| Uruguay | 629,000 | 692,000 | 852,000 | 5,343,000 | 7,142,000 | 11,495,000 |
| Total | 10,158,000 | 11,011,000 | ........ | 203,632,000 | 271,782,000 | 351,552,000 |
| EUROPE. | | | | | | |
| Austria-Hungary: | | | | | | |
| Austria | 706,000 | (3) | (3) | 13,286,000 | 12,000,000 | 12,000,000 |
| Hungary proper | 6,022,000 | 6,129,000 | 6,194,000 | 176,694,000 | 172,308,000 | 180,550,000 |
| Croatia-Slavonia | 1,083,000 | (3) | (3) | 28,953,000 | 25,000,000 | (3) |
| Bosnia-Herzegovina | 805,000 | (3) | (3) | 7,559,000 | 7,000,000 | (3) |
| Total Austria-Hungary | 8,723,000 | (3) | (3) | 226,492,000 | 216,308,000 | (3) |
| Bulgaria | 1,568,000 | 1,571,000 | (3) | 33,200,000 | 30,901,000 | 35,000,000 |
| France | 1,133,000 | 1,128,000 | 766,000 | 21,078,000 | 22,530,000 | 14,000,000 |
| Italy | 3,888,000 | 3,680,000 | 3,954,000 | 108,388,000 | 105,006,000 | 118,103,000 |
| Portugal | (3) | (3) | (3) | 15,000,000 | 15,000,000 | 15,000,000 |
| Roumania | 5,305,000 | 5,104,000 | 5,207,000 | 114,662,000 | 105,552,000 | 110,230,000 |
| Russia: | | | | | | |
| Russia proper | 3,385,000 | ........ | 3,194,000 | 59,798,000 | ........ | ........ |
| Northern Caucasia | 825,000 | ........ | 842,000 | 12,995,000 | ........ | ........ |
| Total Russia | 4,210,000 | 4,043,000 | 4,036,000 | 72,793,000 | 80,608,000 | 74,806,000 |
| Servia | 1,445,000 | (3) | (3) | 23,621,000 | 20,000,000 | (4) |
| Spain | 1,105,000 | 1,137,000 | 1,140,000 | 25,140,000 | 30,325,000 | 25.327,000 |
| Total | ........ | ........ | ........ | 640,374,000 | 626,230,000 | ........ |
| ASIA. | | | | | | |
| India: | | | | | | |
| British | 6,157,000 | 4,874,000 | (3) | 87,240,000 | 64,800,000 | (3) |
| Native States | 1,063,000 | (3) | (3) | (3) | (3) | (3) |
| Total | ........ | ........ | ........ | 87,240,000 | 64,800,000 | ........ |
| Japan | 133,000 | 141,000 | 144,000 | 3,559,000 | 3,753,000 | 3,749,000 |
| Philippine Islands | 948,000 | 1,041,000 | (3) | 9,235,000 | 13,336,000 | (3) |
| Total | ........ | ........ | ........ | 100,034,000 | 81,889,000 | ........ |

[1] Less than 500 acres.

[2] Area and production 1912.

[3] No official statistics.

## CORN—Continued.

TABLE 1.—*Corn: Area and production of undermentioned countries, 1913–1915*—Contd.

| Country. | Area. | | | Production. | | |
|---|---|---|---|---|---|---|
| | 1913 | 1914 | 1915 | 1913 | 1914 | 1915 |
| AFRICA. | *Acres.* | *Acres.* | *Acres.* | *Bushels.* | *Bushels.* | *Bushels.* |
| **Algeria** | 24,000 | (1) | (1) | 394,000 | 350,000 | (1) |
| **Egypt** [2] | 1,789,000 | 1,763,000 | 1,907,000 | 57,044,000 | 78,253,000 | (1) |
| **Union of South Africa** | (1) | (1) | (1) | [3] 30,830,000 | [3] 30,830,000 | [3] 30,830,000 |
| **Total** | ........ | ........ | ........ | 88,268,000 | 109,433,000 | ........ |
| AUSTRALASIA. | | | | | | |
| **Australia:** | | | | | | |
| Queensland | 118,000 | 157,000 | 176,000 | 2,604,000 | 4,039,000 | 4,394,000 |
| New South Wales [4] | 177,000 | 157,000 | (1) | 5,273,000 | 4,593,000 | (1) |
| Victoria | 20,000 | 18,000 | (1) | 738,000 | 826,000 | (1) |
| Western Australia | (5) | (5) | (1) | ........ | 1,000 | (1) |
| South Australia [6] | (5) | (5) | (1) | 4,000 | 3,000 | (1) |
| **Total Australia** | 315,000 | 332,000 | ........ | 8,619,000 | 9,462,000 | ........ |
| **New Zealand** | 5,000 | 6,000 | 5,000 | 222,000 | 312,000 | (1) |
| **Total Australasia** | 320,000 | 338,000 | ........ | 8,811,000 | 9,774,000 | ........ |
| Grand total | ........ | ........ | ........ | 3,587,429,000 | 3,864,279,000 | ........ |

[1] No official statistics.
[2] Includes millet.
[3] Census of 1911.
[4] Includes Federal Territory.
[5] Less than 500 acres.
[6] Includes Northern Territory.

TABLE 2.—*Corn: Total production of countries mentioned in Table 1, 1895–1915.*

| Year. | Production. | Year. | Production. | Year. | Production. | Year. | Production. |
|---|---|---|---|---|---|---|---|
| | *Bushels.* | | *Bushels.* | | *Bushels.* | | *Bushels.* |
| 1895 | 2,834,750,000 | 1901 | 2,366,883,000 | 1906 | 3,963,645,000 | 1911 | 3,481,007,000 |
| 1896 | 2,964,435,000 | 1902 | 3,187,311,000 | 1907 | 3,420,321,000 | 1912 | 4,371,888,000 |
| 1897 | 2,587,206,000 | 1903 | 3,066,506,000 | 1908 | 3,606,931,000 | 1913 | 3,587,429,000 |
| 1898 | 2,682,619,000 | 1904 | 3,109,252,000 | 1909 | 3,563,226,000 | 1914 | 3,864,279,000 |
| 1899 | 2,724,100,000 | 1905 | 3,461,181,000 | 1910 | 4,031,630,000 | 1915 | ........ |
| 1900 | 2,792,561,000 | | | | | | |

## CORN—Continued.

### TABLE 3.—*Corn: Acreage, production, value, exports, etc., in the United States, 1849–1915.*

NOTE.—Figures in *italics* are census returns; figures in roman are estimates of the Department of Agriculture. Estimates of acres are obtained by applying estimated percentages of increase or decrease to the published numbers of the preceding year, except that a revised base is used for applying percentage estimates whenever new census data are available.

| Year. | Acreage. | Average yield per acre. | Production. | Average farm price per bushel Dec. 1. | Farm value Dec. 1. | Chicago cash price per bushel, contract.[1] | | | | Domestic exports, including corn meal, fiscal year beginning July 1. | Per cent of crop exported. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | December. | | Following May. | | | |
| | | | | | | Low. | High. | Low. | High. | | |
| | *Acres.* | *Bush.* | *Bushels.* | *Cents.* | *Dollars.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Bushels.* | *P.ct.* |
| *1849* | ...... | ...... | *592,071,000* | ...... | ...... | ...... | ...... | ...... | ...... | 7,632,860 | 1.3 |
| *1859* | ...... | ...... | *838,793,000* | ...... | ...... | ...... | ...... | ...... | ...... | 4,248,991 | .5 |
| 1866 | 31,307,000 | 25.3 | 867,946,000 | 47.4 | 411,451,000 | 53 | 62 | 64 | 79 | 16,026,947 | 1.8 |
| 1867 | 32,520,000 | 23.6 | 768,320,000 | 57.0 | 437,770,000 | 61 | 65 | 61 | 71 | 12,493,522 | 1.6 |
| 1868 | 34,887,000 | 26.0 | 906,527,000 | 46.8 | 424,057,000 | 38 | 58 | 44 | 51 | 8,286,665 | .9 |
| 1869 | 37,103,000 | 23.6 | 874,320,000 | 59.8 | 522,551,000 | 56 | 67 | 73 | 85 | 2,140,487 | .2 |
| *1869* | ...... | ...... | *760,945,000* | ...... | ...... | ...... | ...... | ...... | ...... | ...... | ...... |
| 1870 | 38,647,000 | 28.3 | 1,094,255,000 | 49.4 | 540,520,000 | 41 | 59 | 46 | 52 | 10,673,553 | 1.0 |
| 1871 | 34,091,000 | 29.1 | 991,898,000 | 43.4 | 430,356,000 | 36 | 39 | 38 | 43 | 35,727,010 | 3.6 |
| 1872 | 35,527,000 | 30.8 | 1,092,719,000 | 35.3 | 385,736,000 | 27 | 28 | 34 | 39 | 40,154,374 | 3.7 |
| 1873 | 39,197,000 | 23.8 | 932,274,000 | 44.2 | 411,961,000 | 40 | 49 | 49 | 59 | 35,985,834 | 3.9 |
| 1874 | 41,037,000 | 20.7 | 850,148,000 | 58.4 | 496,271,000 | 64 | 76 | 53 | 67 | 30,025,036 | 3.5 |
| 1875 | 44,841,000 | 29.5 | 1,321,069,000 | 36.7 | 484,675,000 | 40 | 47 | 41 | 45 | 50,910,532 | 3.9 |
| 1876 | 49,033,000 | 26.2 | 1,283,828,000 | 34.0 | 436,109,000 | 40 | 43 | 43 | 56 | 72,652,611 | 5.7 |
| 1877 | 50,369,000 | 26.7 | 1,342,558,000 | 34.8 | 467,635,000 | 41 | 49 | 35 | 41 | 87,192,110 | 6.5 |
| 1878 | 51,585,000 | 26.9 | 1,388,219,000 | 31.7 | 440,281,000 | 30 | 32 | 33 | 36 | 87,884,892 | 6.3 |
| 1879 | 53,085,000 | 29.2 | 1,547,902,000 | 37.5 | 580,486,000 | 39 | 43¼ | 32⅞ | 36⅛ | 99,572,329 | 6.4 |
| *1879* | *62,369,000* | *28.1* | *1,754,592,000* | ...... | ...... | ...... | ...... | ...... | ...... | ...... | ...... |
| 1880 | 62,318,000 | 27.6 | 1,717,435,000 | 39.6 | 679,714,000 | 35⅜ | 42 | 41½ | 45 | 93,648,147 | 5.5 |
| 1881 | 64,262,000 | 18.6 | 1,194,916,000 | 63.6 | 759,482,000 | 58½ | 63½ | 69 | 76⅞ | 44,340,683 | 3.7 |
| 1882 | 65,660,000 | 24.6 | 1,617,025,000 | 48.5 | 783,867,000 | 49¼ | 61 | 53½ | 56¾ | 41,655,653 | 2.6 |
| 1883 | 68,302,000 | 22.7 | 1,551,067,000 | 42.4 | 658,051,000 | 54¼ | 63⅛ | 52¼ | 57 | 46,258,606 | 3.0 |
| 1884 | 69,684,000 | 25.8 | 1,795,528,000 | 35.7 | 640,736,000 | 34½ | 40¼ | 44¾ | 49 | 52,876,456 | 2.9 |
| 1885 | 73,130,000 | 26.5 | 1,936,176,000 | 32.8 | 635,675,000 | 36 | 42¼ | 34¼ | 36¾ | 64,829,617 | 3.3 |
| 1886 | 75,694,000 | 22.0 | 1,665,441,000 | 36.6 | 610,311,000 | 35⅞ | 38 | 36⅞ | 39⅝ | 41,368,584 | 2.5 |
| 1887 | 72,393,000 | 20.1 | 1,456,161,000 | 44.4 | 646,107,000 | 47 | 51⅛ | 54 | 60 | 25,360,869 | 1.7 |
| 1888 | 75,673,000 | 26.3 | 1,987,790,000 | 34.1 | 677,562,000 | 33½ | 35⅞ | 33⅛ | 35⅝ | 70,841,673 | 3.6 |
| 1889 | 78,320,000 | 27.0 | 2,112,892,000 | 28.3 | 597,919,000 | 29¼ | 35 | 32¼ | 35 | 103,418,709 | 4.9 |
| *1889* | *72,088,000* | *29.4* | *2,122,328,000* | ...... | ...... | ...... | ...... | ...... | ...... | ...... | ...... |
| 1890 | 71,971,000 | 20.7 | 1,489,970,000 | 50.6 | 754,433,000 | 47¾ | 53 | 55 | 69½ | 32,041,529 | 2.2 |
| 1891 | 76,205,000 | 27.0 | 2,060,154,000 | 40.6 | 836,439,000 | 39⅝ | 59 | 40¾ | [2]100 | 76,602,285 | 3.7 |
| 1892 | 70,627,000 | 23.1 | 1,628,464,000 | 39.4 | 642,147,000 | 40 | 42⅞ | 39½ | 44½ | 47,121,894 | 2.9 |
| 1893 | 72,036,000 | 22.5 | 1,619,496,000 | 36.5 | 591,626,000 | 34¼ | 36⅛ | 36¾ | 38½ | 66,489,529 | 4.1 |
| 1894 | 62,582,000 | 19.4 | 1,212,770,000 | 45.7 | 554,719,000 | 44¾ | 47½ | 47¾ | 55½ | 28,585,405 | 2.4 |
| 1895 | 82,076,000 | 26.2 | 2,151,139,000 | 25.3 | 544,986,000 | 25 | 26¾ | 27½ | 29½ | 101,100,375 | 4.7 |
| 1896 | 81,027,000 | 28.2 | 2,283,875,000 | 21.5 | 491,007,000 | 22½ | 23¾ | 23 | 25½ | 178,817,417 | 7.8 |
| 1897 | 80,095,000 | 23.8 | 1,902,968,000 | 26.3 | 501,073,000 | 25 | 27½ | 32⅞ | 37 | 212,055,543 | 11.1 |
| 1898 | 77,722,000 | 24.8 | 1,924,185,000 | 28.7 | 552,023,000 | 33⅛ | 38 | 32½ | 34⅝ | 177,255,046 | 9.2 |
| 1899 | 82,109,000 | 25.3 | 2,078,144.000 | 30.3 | 629,210,000 | 30 | 31½ | 36 | 40½ | 213,123,412 | 10.3 |
| *1899* | *94,914,000* | *28.1* | *2,666,324,000* | ...... | ...... | ...... | ...... | ...... | ...... | ...... | ...... |
| 1900 | 83,321,000 | 25.3 | 2,105,103,000 | 35.7 | 751,220,000 | 35¼ | 40½ | 42⅝ | 58½ | 181,405,473 | 8.6 |
| 1901 | 91,350,000 | 16.7 | 1,522,520,000 | 60.5 | 921,556,000 | 62¼ | 67½ | 59⅛ | 64⅝ | 28,028,688 | 1.8 |
| 1902 | 94,044,000 | 26.8 | 2,523,648,000 | 40.3 | 1,017,017,000 | 43¾ | 57¼ | 44 | 46 | 76,639,261 | 3.0 |
| 1903 | 88,092,000 | 25.5 | 2,244,177,000 | 42.5 | 952,869,000 | 41 | 43¾ | 47½ | 50 | 58,222,061 | 2.6 |
| 1904 | 92,232,000 | 26.8 | 2,467,481,000 | 44.1 | 1,087,461,000 | 43½ | 49 | 48 | 64½ | 90,293,483 | 3.7 |
| 1905 | 94,011,000 | 28.8 | 2,707,994,000 | 41.2 | 1,116,697,000 | 42 | 50¼ | 47½ | 50 | 119,893,833 | 4.4 |
| 1906 | 96,738,000 | 30.3 | 2,927,416,000 | 39.9 | 1,166,626,000 | 40 | 46 | 49¼ | 56 | 86,368,228 | 3.0 |
| 1907 | 99,931,000 | 25.9 | 2,592,320,000 | 51.6 | 1,336,901,000 | 57½ | 61½ | 67¾ | 82 | 55,063,860 | 2.1 |
| 1908 | 101,788,000 | 26.2 | 2,668,651,000 | 60.6 | 1,616,145,000 | 56¾ | 62¼ | 72¼ | 76 | 37,665,040 | 1.4 |
| 1909 | 108,771,000 | 25.5 | 2,772,376,000 | ...... | ...... | ...... | ...... | ...... | ...... | ...... | ...... |
| *1909* | *98,383,000* | *25.9* | *2,552,190,000* | 57.9 | 1,477,223,000 | 62½ | 66 | 56 | 63 | 38,128,498 | 1.5 |
| 1910[3] | 104,035,000 | 27.7 | 2,886,260,000 | 48.0 | 1,384,817,000 | 45½ | 50 | 52½ | 55½ | 65,614,522 | 2.3 |
| 1911 | 105,825,000 | 23.9 | 2,531,488,000 | 61.8 | 1,565,258,000 | 68 | 70 | 76¼ | 82½ | 41,797,291 | 1.7 |
| 1912 | 107,083,000 | 29.2 | 3,124,746,000 | 48.7 | 1,520,454,000 | 47½ | 54 | 55¼ | 60 | 50,780,143 | 1.6 |
| 1913 | 105,820,000 | 23.1 | 2,446,988,000 | 69.1 | 1,692,092,000 | 64 | 73½ | 67 | 72½ | 10,725,819 | .4 |
| 1914 | 103,435,000 | 25.8 | 2,672,804,000 | 64.4 | 1,722,070,000 | 62¼ | 68¼ | 50½ | 56 | 50,668,303 | 1.9 |
| 1915 | 108,321,000 | 28.2 | 3,054,535,000 | 57.5 | 1,755,859,000 | 69½ | 75 | ...... | ...... | ...... | ...... |

[1] No. 2 to 1908.

[2] Coincident with "corner."

[3] Figures adjusted to census basis.

## CORN—Continued.

TABLE 4.—*Corn: Acreage, production, and total farm value, by States, 1914 and 1915.*

| State. | Thousands of acres. | | Production (thousands of bushels). | | Total value, basis Dec. 1 price (thousands of dollars). | |
|---|---|---|---|---|---|---|
| | 1915 | 1914 | 1915 | 1914 | 1915 | 1914 |
| Maine | 16 | 16 | 656 | 736 | 558 | 648 |
| New Hampshire | 22 | 21 | 990 | 966 | 752 | 792 |
| Vermont | 47 | 45 | 2,256 | 2,115 | 1,895 | 1,713 |
| Massachusetts | 48 | 48 | 2,304 | 2,256 | 1,843 | 1,918 |
| Rhode Island | 12 | 11 | 516 | 462 | 516 | 453 |
| Connecticut | 65 | 61 | 3,250 | 2,806 | 2,762 | 2,497 |
| New York | 605 | 550 | 24,200 | 22,550 | 18,876 | 18,716 |
| New Jersey | 285 | 272 | 10,830 | 10,472 | 8,122 | 7,959 |
| Pennsylvania | 1,520 | 1,463 | 58,520 | 62,178 | 40,964 | 45,390 |
| Delaware | 210 | 197 | 6,615 | 7,092 | 4,101 | 4,397 |
| Maryland | 710 | 663 | 24,850 | 24,531 | 15,158 | 16,681 |
| Virginia | 2,125 | 1,921 | 60,562 | 39,380 | 42,999 | 31,898 |
| West Virginia | 800 | 732 | 25,200 | 22,692 | 18,648 | 18,834 |
| North Carolina | 3,050 | 2,835 | 64,050 | 57,550 | 49,318 | 49,493 |
| South Carolina | 2,155 | 1,975 | 35,558 | 36,538 | 30,935 | 33,615 |
| Georgia | 4,330 | 4,000 | 64,950 | 56,000 | 50,661 | 47,600 |
| Florida | 800 | 700 | 12,000 | 11,200 | 8,760 | 8,960 |
| Ohio | 3,760 | 3,650 | 156,040 | 142,715 | 87,382 | 87,056 |
| Indiana | 5,025 | 4,949 | 190,950 | 163,317 | 97,384 | 94,724 |
| Illinois | 10,449 | 10,346 | 376,164 | 300,034 | 203,129 | 183,021 |
| Michigan | 1,750 | 1,750 | 56,000 | 63,000 | 38,080 | 42,210 |
| Wisconsin | 1,775 | 1,725 | 40,825 | 69,862 | 27,761 | 45,410 |
| Minnesota | 2,700 | 2,600 | 62,100 | 91,000 | 38,502 | 47,320 |
| Iowa | 10,100 | 10,248 | 303,000 | 389,424 | 154,530 | 214,183 |
| Missouri | 7,100 | 7,200 | 209,450 | 158,400 | 119,386 | 107,712 |
| North Dakota | 700 | 500 | 9,800 | 14,000 | 6,566 | 8,120 |
| South Dakota | 3,250 | 3,000 | 94,250 | 78,000 | 46,182 | 39,000 |
| Nebraska | 7,100 | 7,100 | 213,000 | 173,950 | 100,110 | 92,194 |
| Kansas | 5,550 | 5,850 | 172,050 | 108,225 | 87,746 | 68,182 |
| Kentucky | 3,800 | 3,650 | 114,000 | 91,250 | 63,840 | 58,400 |
| Tennessee | 3,500 | 3,350 | 94,500 | 80,400 | 54,810 | 54,672 |
| Alabama | 3,900 | 3,264 | 66,300 | 55,488 | 45,747 | 44,390 |
| Mississippi | 3,650 | 3,150 | 69,350 | 58,275 | 45,078 | 42,541 |
| Louisiana | 2,200 | 2,000 | 45,100 | 38,600 | 28,864 | 28,950 |
| Texas | 7,450 | 6,400 | 175,075 | 124,800 | 101,544 | 92,352 |
| Oklahoma | 4,200 | 4,000 | 123,900 | 50,000 | 56,994 | 32,000 |
| Arkansas | 2,700 | 2,400 | 62,100 | 42,000 | 39,744 | 33,600 |
| Montana | 70 | 50 | 1,960 | 1,400 | 1,352 | 1,064 |
| Wyoming | 25 | 21 | 625 | 525 | 419 | 368 |
| Colorado | 470 | 462 | 11,280 | 10,626 | 6,204 | 6,376 |
| New Mexico | 105 | 92 | 2,730 | 2,576 | 1,993 | 2,061 |
| Arizona | 20 | 18 | 600 | 576 | 690 | 691 |
| Utah | 13 | 12 | 442 | 420 | 354 | 315 |
| Nevada | 1 | 1 | 35 | 36 | 33 | 40 |
| Idaho | 22 | 19 | 770 | 589 | 500 | 424 |
| Washington | 39 | 36 | 1,053 | 972 | 811 | 710 |
| Oregon | 33 | 22 | 1,155 | 660 | 947 | 541 |
| California | 64 | 60 | 2,624 | 2,160 | 2,309 | 1,879 |
| United States | 108,821 | 103,435 | 3,054,535 | 2,672,804 | 1,755,859 | 1,722,070 |

## CORN—Continued.

### TABLE 5.—*Corn: Production and distribution in the United States, 1897–1915.*

[000 omitted.]

| Year. | Old stock on farms Nov. 1. | Crop. | Total supplies. | Stock on farms Mar. 1 following. | Shipped out of county where grown. |
|---|---|---|---|---|---|
| | *Bushels.* | *Bushels.* | *Bushels.* | *Bushels.* | *Bushels.* |
| 1897 | 290,894 | 1,902,968 | 2,193,902 | 782,871 | 411,617 |
| 1898 | 137,894 | 1,924,185 | 2,062,079 | 800,533 | 396,005 |
| 1899 | 113,644 | 2,078,144 | 2,191,788 | 773,730 | 348,098 |
| 1900 | 92,328 | 2,105,103 | 2,197,431 | 776,166 | 478,417 |
| 1901 | 95,825 | 1,522,520 | 1,618,345 | 441,132 | 153,213 |
| 1902 | 29,267 | 2,523,648 | 2,552,915 | 1,050,653 | 557,296 |
| 1903 | 131,210 | 2,244,177 | 2,375,387 | 839,053 | 419,877 |
| 1904 | 80,246 | 2,467,481 | 2,547,727 | 954,268 | 551,635 |
| 1905 | 82,285 | 2,707,994 | 2,790,279 | 1,108,364 | 681,539 |
| 1906 | 119,633 | 2,927,416 | 3,047,049 | 1,297,979 | 679,544 |
| 1907 | 130,995 | 2,592,320 | 2,723,315 | 962,429 | 467,675 |
| 1908 | 71,124 | 2,668,651 | 2,739,775 | 1,047,763 | 568,129 |
| 1909 | 79,779 | 2,552,190 | 2,631,969 | 977,561 | 635,248 |
| 1910 | 115,696 | 2,886,260 | 3,001,956 | 1,165,378 | 661,777 |
| 1911 | 123,824 | 2,531,488 | 2,655,312 | 884,069 | 517,704 |
| 1912 | 64,764 | 3,124,746 | 3,189,510 | 1,289,655 | 680,796 |
| 1913 | 137,972 | 2,446,988 | 2,584,960 | 866,392 | 422,091 |
| 1914 | 80,046 | 2,672,804 | 2,752,850 | 910,894 | 498,285 |
| 1915 | 96,009 | 3,054,535 | 3,150,544 | .............. | .......... |

## CORN—Continued.

TABLE 6.—*Corn: Yield per acre, price per bushel Dec. 1, and value per acre, by States.*

| State. | Yield per acre (bushels). | | | | | | | | | | | Farm price per bushel (cents). | | | | | | Value per acre (dollars).[1] | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 10-year average, 1906–1915. | 1906 | 1907 | 1908 | 1909 | 1910 | 1911 | 1912 | 1913 | 1914 | 1915 | 10-year average, 1906–1915. | 1911 | 1912 | 1913 | 1914 | 1915 | 5-year average, 1910–1914. | 1915 |
| Me. | 40.8 | 37.0 | 37.0 | 40.5 | 38.0 | 46.0 | 44.0 | 40.0 | 38.0 | 46.0 | 41.0 | 80 | 90 | 75 | 87 | 88 | 85 | 35.16 | 34.85 |
| N. H. | 41.2 | 37.5 | 35.0 | 39.0 | 35.1 | 46.0 | 45.0 | 46.0 | 37.0 | 46.0 | 45.0 | 76 | 82 | 75 | 81 | 82 | 76 | 34.17 | 34.20 |
| Vt. | 40.3 | 35.5 | 36.0 | 40.3 | 37.0 | 43.0 | 41.0 | 40.0 | 37.0 | 47.0 | 46.0 | 75 | 80 | 72 | 81 | 81 | 84 | 31.60 | 38.64 |
| Mass. | 42.3 | 39.7 | 36.0 | 40.4 | 38.0 | 45.5 | 44.0 | 45.0 | 40.5 | 47.0 | 47.0 | 78 | 83 | 77 | 85 | 85 | 80 | 35.48 | 37.60 |
| R. I. | 38.8 | 33.1 | 31.2 | 42.8 | 33.2 | 40.0 | 45.0 | 41.5 | 36.5 | 42.0 | 43.0 | 89 | 95 | 88 | 99 | 98 | 100 | 37.95 | 43.00 |
| Conn. | 44.2 | 40.0 | 33.0 | 41.3 | 41.0 | 53.2 | 48.5 | 50.0 | 38.5 | 46.0 | 50.0 | 78 | 83 | 77 | 85 | 89 | 85 | 37.72 | 42.50 |
| N. Y. | 36.2 | 34.9 | 27.0 | 38.8 | 36.0 | 38.3 | 38.5 | 38.6 | 28.5 | 41.0 | 40.0 | 74 | 77 | 70 | 81 | 83 | 78 | 27.58 | 31.20 |
| N. J. | 36.5 | 36.3 | 31.5 | 38.0 | 32.7 | 36.0 | 36.8 | 38.0 | 39.5 | 38.5 | 38.0 | 68 | 71 | 68 | 75 | 76 | 75 | 26.49 | 28.50 |
| Penn. | 39.2 | 40.2 | 32.5 | 39.5 | 32.0 | 41.0 | 44.5 | 42.5 | 39.0 | 42.5 | 38.5 | 66 | 68 | 63 | 72 | 73 | 70 | 28.07 | 26.95 |
| Del. | 31.9 | 30.0 | 27.5 | 32.0 | 31.0 | 31.8 | 34.0 | 34.0 | 31.5 | 36.0 | 31.5 | 56 | 61 | 51 | 59 | 62 | 62 | 19.10 | 19.53 |
| Md. | 34.9 | 35.0 | 34.2 | 36.6 | 31.4 | 33.5 | 36.5 | 36.5 | 33.0 | 37.0 | 35.0 | 60 | 63 | 55 | 65 | 68 | 61 | 21.82 | 21.35 |
| Va. | 24.7 | 24.3 | 25.0 | 26.0 | 23.2 | 25.5 | 24.0 | 24.0 | 26.0 | 20.5 | 28.5 | 70 | 73 | 71 | 76 | 81 | 71 | 17.50 | 20.24 |
| W. Va. | 30.0 | 30.3 | 28.0 | 31.2 | 31.4 | 26.0 | 25.7 | 33.8 | 31.0 | 31.0 | 31.5 | 72 | 77 | 65 | 80 | 83 | 74 | 21.99 | 23.31 |
| N. C. | 18.3 | 15.3 | 16.5 | 18.0 | 16.8 | 18.6 | 18.4 | 18.2 | 19.5 | 20.3 | 21.0 | 80 | 82 | 83 | 88 | 86 | 77 | 15.79 | 16.17 |
| S. C. | 16.7 | 12.2 | 15.1 | 14.1 | 16.7 | 18.5 | 18.2 | 17.9 | 19.5 | 18.5 | 16.5 | 87 | 91 | 85 | 97 | 92 | 87 | 16.58 | 14.36 |
| Ga. | 14.0 | 12.0 | 13.0 | 12.5 | 13.9 | 14.5 | 16.0 | 13.8 | 15.5 | 14.0 | 15.0 | 81 | 83 | 85 | 91 | 85 | 78 | 12.46 | 11.70 |
| Fla. | 13.2 | 11.0 | 11.3 | 10.5 | 12.6 | 13.0 | 14.6 | 13.0 | 15.0 | 16.0 | 15.0 | 79 | 80 | 79 | 82 | 80 | 73 | 11.62 | 10.95 |
| Ohio | 39.1 | 42.6 | 34.6 | 38.5 | 39.5 | 36.5 | 38.6 | 42.8 | 37.5 | 39.1 | 41.5 | 54 | 58 | 45 | 63 | 61 | 56 | 21.18 | 23.24 |
| Ind. | 36.8 | 39.6 | 36.0 | 30.3 | 40.0 | 39.3 | 36.0 | 40.3 | 36.0 | 33.0 | 38.0 | 50 | 54 | 42 | 60 | 58 | 51 | 18.57 | 19.38 |
| Ill. | 34.4 | 36.1 | 36.0 | 31.6 | 35.9 | 39.1 | 33.0 | 40.0 | 27.0 | 29.0 | 36.0 | 50 | 55 | 41 | 63 | 61 | 54 | 16.82 | 19.44 |
| Mich. | 33.5 | 37.0 | 30.1 | 31.8 | 35.4 | 32.4 | 33.0 | 34.0 | 33.5 | 36.0 | 32.0 | 60 | 65 | 57 | 67 | 67 | 68 | 20.91 | 21.76 |
| Wis. | 34.8 | 41.2 | 32.0 | 33.7 | 33.0 | 32.5 | 30.3 | 35.7 | 40.5 | 40.5 | 23.0 | 57 | 60 | 51 | 60 | 65 | 68 | 21.50 | 15.64 |
| Minn. | 32.3 | 33.6 | 27.0 | 29.0 | 34.8 | 32.7 | 33.7 | 34.5 | 40.0 | 35.0 | 23.0 | 49 | 53 | 37 | 53 | 52 | 62 | 16.95 | 14.26 |
| Iowa | 31.4 | 39.5 | 29.5 | 31.7 | 31.5 | 36.3 | 31.0 | 43.0 | 34.0 | 38.0 | 30.0 | 47 | 53 | 35 | 60 | 55 | 51 | 17.17 | 15.30 |
| Mo. | 27.7 | 32.3 | 31.0 | 27.0 | 26.4 | 33.0 | 26.0 | 32.0 | 17.5 | 22.0 | 29.5 | 55 | 60 | 46 | 74 | 68 | 57 | 14.55 | 16.82 |
| N. Dak. | 23.9 | 27.8 | 20.0 | 23.8 | 31.0 | 14.0 | 25.0 | 26.7 | 28.8 | 28.0 | 14.0 | 55 | 60 | 43 | 52 | 58 | 67 | 13.16 | 9.38 |
| S. Dak. | 27.8 | 33.5 | 25.5 | 29.7 | 31.7 | 25.0 | 22.0 | 30.6 | 25.5 | 26.0 | 29.0 | 46 | 53 | 37 | 56 | 50 | 49 | 12.05 | 14.21 |
| Nebr. | 25.0 | 34.1 | 24.0 | 27.0 | 24.8 | 25.8 | 21.0 | 24.0 | 15.0 | 24.5 | 30.0 | 46 | 55 | 37 | 65 | 53 | 47 | 10.49 | 14.10 |
| Kans. | 20.2 | 28.9 | 22.1 | 22.0 | 19.9 | 19.0 | 14.5 | 23.0 | 3.2 | 18.5 | 31.0 | 52 | 63 | 40 | 78 | 63 | 51 | 8.21 | 15.81 |
| Ky. | 27.6 | 33.0 | 28.2 | 25.2 | 29.0 | 29.0 | 26.0 | 30.4 | 20.5 | 25.0 | 30.0 | 59 | 63 | 55 | 70 | 64 | 56 | 16.01 | 16.80 |
| Tenn. | 25.2 | 28.1 | 26.0 | 24.8 | 22.0 | 25.9 | 26.8 | 26.5 | 20.5 | 24.0 | 27.0 | 62 | 61 | 61 | 77 | 68 | 58 | 15.82 | 15.66 |
| Ala. | 16.4 | 16.0 | 15.5 | 14.7 | 13.5 | 18.0 | 18.0 | 17.2 | 17.3 | 17.0 | 17.0 | 77 | 78 | 79 | 89 | 80 | 69 | 13.88 | 11.73 |
| Miss. | 18.3 | 18.5 | 17.0 | 17.3 | 14.5 | 20.5 | 19.0 | 18.3 | 20.0 | 18.5 | 19.0 | 72 | 72 | 71 | 77 | 73 | 65 | 13.70 | 12.35 |
| La. | 19.9 | 17.2 | 17.5 | 19.8 | 23.0 | 23.6 | 18.5 | 18.0 | 22.0 | 19.3 | 20.5 | 68 | 70 | 68 | 77 | 75 | 64 | 13.92 | 13.12 |
| Tex. | 20.2 | 22.5 | 21.0 | 25.7 | 15.0 | 20.6 | 9.5 | 21.0 | 24.0 | 19.5 | 23.5 | 67 | 80 | 64 | 82 | 74 | 58 | 13.63 | 13.63 |
| Okla. | 19.4 | 33.3 | 24.4 | 24.8 | 17.0 | 16.0 | 6.5 | 18.7 | 11.0 | 12.5 | 29.5 | 52 | 70 | 41 | 72 | 64 | 46 | 7.26 | 13.57 |
| Ark. | 20.4 | 23.6 | 17.2 | 20.2 | 18.0 | 24.0 | 20.8 | 20.4 | 19.0 | 17.5 | 23.0 | 67 | 72 | 67 | 78 | 80 | 64 | 14.29 | 14.72 |
| Mont. | 26.7 | 23.4 | 22.5 | 23.4 | 35.0 | 23.0 | 26.5 | 25.5 | 31.5 | 28.0 | 28.0 | 78 | 80 | 70 | 77 | 76 | 69 | 21.29 | 19.32 |
| Wyo. | 23.5 | 27.0 | 25.0 | 28.0 | 28.0 | 10.0 | 15.0 | 23.0 | 29.0 | 25.0 | 25.0 | 71 | 76 | 64 | 80 | 70 | 67 | 14.68 | 16.75 |
| Colo. | 21.2 | 27.9 | 23.5 | 20.2 | 24.2 | 19.9 | 14.0 | 20.8 | 15.0 | 23.0 | 24.0 | 63 | 78 | 50 | 73 | 60 | 55 | 11.60 | 13.20 |
| N. Mex. | 25.9 | 29.4 | 29.0 | 27.0 | 31.3 | 23.0 | 24.7 | 22.4 | 18.5 | 28.0 | 26.0 | 79 | 84 | 75 | 75 | 80 | 73 | 18.91 | 18.98 |
| Ariz. | 32.1 | 29.5 | 37.5 | 33.2 | 32.1 | 32.5 | 33.0 | 33.0 | 28.0 | 32.0 | 30.0 | 103 | 97 | 100 | 110 | 120 | 115 | 33.99 | 34.50 |
| Utah | 31.7 | 32.0 | 25.5 | 29.4 | 31.4 | 30.3 | 35.0 | 30.0 | 34.0 | 35.0 | 34.0 | 77 | 81 | 75 | 70 | 75 | 80 | 25.27 | 27.20 |
| Nev. | 32.6 | .... | .... | .... | .... | 30.0 | 30.5 | 30.0 | 34.0 | 36.0 | 35.0 | 99 | 90 | 98 | 118 | 110 | 93 | 33.31 | 32.55 |
| Idaho | 31.1 | 28.3 | 30.0 | 29.0 | 30.6 | 32.0 | 30.0 | 32.8 | 32.0 | 31.0 | 35.0 | 70 | 85 | 70 | 68 | 72 | 65 | 23.05 | 22.75 |
| Wash. | 27.1 | 25.2 | 27.0 | 25.5 | 27.8 | 28.0 | 28.5 | 27.3 | 28.0 | 27.0 | 27.0 | 75 | 79 | 77 | 80 | 73 | 77 | 21.33 | 20.79 |
| Oreg. | 29.3 | 27.6 | 27.5 | 27.8 | 30.7 | 25.5 | 28.5 | 31.5 | 28.5 | 30.0 | 35.0 | 76 | 80 | 75 | 70 | 82 | 82 | 22.74 | 28.70 |
| Cal. | 35.6 | 34.9 | 34.0 | 32.0 | 34.8 | 37.5 | 36.0 | 37.0 | 33.0 | 36.0 | 41.0 | 85 | 90 | 85 | 88 | 87 | 88 | 30.84 | 36.08 |
| U. S. | 26.6 | 30.3 | 25.9 | 26.2 | 25.5 | 27.7 | 23.9 | 29.2 | 23.1 | 25.8 | 28.2 | 56.1 | 61.8 | 48.7 | 69.1 | 64.4 | 57.5 | 14.99 | 16.21 |

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[1] Based upon farm price Dec. 1.

## CORN—Continued.

### TABLE 7.—*Corn: Wholesale price per bushel, 1900–1915.*

| Date. | New York. |  | Baltimore. |  | Cincinnati. |  | Chicago. |  | Detroit. |  | St. Louis. |  | San Francisco. |  |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  | No. 2. yellow. |  | Mixed. |  | No. 2 mixed.[1] |  | Contract. |  | No. 3. |  | No. 2. |  | White (per 100 lbs.). |  |
|  | Low. | High. | Low. | High. | Low. | High. | Low. | High. | Low. | High. | Low. | High. | Low. | High. |
|  | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Dolls.* | *Dolls.* |
| 1900 | 41 | 52¼ | 36⅝ | 48⅞ | 32¾ | 47 | 30½ | 49⅝ | 31½ | 37 | 30½ | 43 | 1.00 | 1.30 |
| 1901 | 45⅞ | 76 | 41½ | 68 | 38 | 71½ | 36 | 67½ | 38 | 67 | 35 | 70 | 1.10 | 1.75 |
| 1902 | 59 | 76½ | 43 | 77 | 44 | 69 | 43¾ | 88 | 47 | 67 | 40½ | 69¼ | 1.30 | 1.65 |
| 1903 | 49⅞ | 63 | 46½ | 61 | 40 | 54½ | 41 | 53 | 38 | 53¾ | 39 | 55 | 1.17½ | 1.57½ |
| 1904 | 53¼ | 72 | 49¼ | 58¾ | 45½ | 58½ | 42¾ | 58⅛ | 42 | 60 | 42½ | 57 | 1.25 | 1.55 |
| 1905 | 50¾ | 65 | 42 | 65 | 44½ | 59½ | 42 | 64½ | 44¾ | 59 | 41½ | 58½ | 1.25 | 1.55 |
| 1906 | 47 | 61½ | 45⅝ | 58 | 42 | 55⅛ | 39 | 54¾ | 43 | 55 | 39½ | 54¼ | ...... | ...... |
| 1907 | 49½ | 78 | 47 | 74¼ | 43 | 71 | 39¾ | 66½ | 43 | 69½ | 39 | 66 | 1.25 | 1.60 |
| 1908 | 61 | 76 | 59⅜ | 83½ | 54½ | 83½ | 56½ | 82 | 53½ | 83 | 54¼ | 81½ | 1.60 | 1.90 |
| 1909 | 66¼ | 85½ | 63½ | 82 | 57 | 78 | 58¼ | 77 | 59 | 79 | 58 | 77 | 1.72½ | 1.95 |
| 1910 | (2) | (2) | 50 | 70½ | 46 | 69½ | 45½ | 68 | 46½ | 68¼ | 44 | 68 | 1.40 | 1.85 |
| 1911 | (2) | (2) | 48⅞ | 79 | 45½ | 77½ | 45½ | 76 | 45¾ | 76 | 43½ | 77 | 1 31¼ | 1.80 |
| 1912 | 54½ | 70 | 52 | 87 | 47 | 87 | 47½ | 83 | 48 | 83½ | 45 | 85 | 1.50 | 1.97½ |
| 1913 | 54½ | 88¼ | 52⅛ | 68 | 48 | 81 | 46½ | 78¼ | 48 | 78½ | 45 | 82 | 1 45 | 1.87 |
| 1914 | 60 | 93¼ | 66¼ | 89 | 63½ | 86½ | 60 | 86 | 62 | 88 | 62⅜ | 87 | 1 61 | 1.93 |
| 1915. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| January | 77½ | 86⅛ | 74 | 81¾ | 70 | 78½ | 68½ | 77 | 70 | 77½ | 69 | 77 | 1.82½ | 1.85 |
| February | 80¼ | 88⅜ | 72 | 83½ | 70 | 81 | 68½ | 78 | 70½ | 79 | 68½ | 78 | 1.82½ | 1.90 |
| March | 82 | 89½ | 73 | 77½ | 71 | 77 | 70 | 75 | 70½ | 75 | 70 | 75½ | 1.85 | 1.87½ |
| April | 83½ | 90¼ | 75⅛ | 84¾ | 75 | 81 | 72 | 79 | 74 | 80 | 74½ | 78½ | 1.78 | 1.87½ |
| May | 82¼ | 88¼ | 76½ | 83½ | 77 | 80 | 50½ | 56 | 75½ | 80 | 73½ | 77⅜ | 1.76 | 1.80 |
| June | 78⅛ | 86¼ | 76½ | 81 | 74½ | 79½ | 71¼ | 76½ | 73 | 78½ | 71½ | 76 | 1.72 | 1.77 |
| July | 86½ | 92¾ | 79 | 87 | 77 | 84 | 75¾ | 82 | 78 | 83½ | 73⅞ | 80⅜ | 1.73 | 1.77 |
| August | 86 | 92¾ | 86 | 86 | 77½ | 82 | 75¼ | 82¼ | 82 | 84 | 72½ | 81 | 1.74 | 1.78 |
| September | 75 | 88⅝ | ...... | ...... | 67 | 79 | 65¼ | 78 | 71 | 81½ | 68½ | 78 | 1.74 | 1.75 |
| October | 72⅜ | 78¼ | ...... | ...... | 63½ | 69 | 59¾ | 67 | 65 | 69 | 58¾ | 66 | 1.46 | 1.67 |
| November | 74½ | 80½ | 67½ | 71 | 62 | 69 | 61½ | 68½ | 64 | 69½ | 60 | 65 | 1.53 | 1.64 |
| December | 80 | 85½ | 70⅝ | 78 | 64½ | 69½ | 69½ | 75 | 66½ | 75 | 65 | 75½ | 1.62 | 1.80 |
| Year | 72⅜ | 92¾ | 67½ | 87 | 62 | 84 | 50½ | 82¼ | 64 | 84 | 58¾ | 80⅝ | 1.46 | 1.90 |

[1] No. 2 grade to 1912.

[2] Nominal.

### TABLE 8.—*Corn: Condition of crop, United States, on first of months named, 1895–1915.*

| Year. | July. | Aug. | Sept. | Oct. | Year. | July. | Aug. | Sept. | Oct. | Year. | July. | Aug. | Sept. | Oct. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  | *P. ct.* | *P. ct.* | *P. ct.* | *P. ct.* |  | *P. ct.* | *P. ct.* | *P. ct.* | *P. ct.* |  | *P. ct.* | *P. ct.* | *P. ct.* | *P. ct.* |
| 1895 | 99.3 | 102.5 | 96.4 | 95.5 | 1902 | 87.5 | 86.5 | 84.3 | 79.6 | 1909 | 89.3 | 84.4 | 74.6 | 73.8 |
| 1896 | 92.4 | 96.0 | 91.0 | 90.5 | 1903 | 79.4 | 78.7 | 80.1 | 80.8 | 1910 | 85.4 | 79 3 | 78.2 | 80.3 |
| 1897 | 82.9 | 84.2 | 79.3 | 77.1 | 1904 | 86.4 | 87.3 | 84.6 | 83.9 | 1911 | 80.1 | 69.6 | 70.3 | 70.4 |
| 1898 | 90.5 | 87.0 | 84.1 | 82.0 | 1905 | 87.3 | 89.0 | 89.5 | 89.2 | 1912 | 81.5 | 80.0 | 82.1 | 82.2 |
| 1899 | 86.5 | 89.9 | 85.2 | 82.7 | 1906 | 87.5 | 88.0 | 90.2 | 90.1 | 1913 | 86.9 | 75.8 | 65.1 | 65.3 |
| 1900 | 89.5 | 87.5 | 80.6 | 78.2 | 1907 | 80.2 | 82.8 | 80.2 | 78.0 | 1914 | 85.8 | 74.8 | 71.7 | 72.9 |
| 1901 | 81.3 | 54.0 | 51.7 | 52.1 | 1908 | 82.8 | 82.5 | 79.4 | 77.8 | 1915 | 81.2 | 79.5 | 78.8 | 79.7 |

## CORN—Continued.

**Table 9.**—*Corn: Farm price per bushel on first of each month, by geographical divisions, 1914 and 1915.*

| Month. | United States. | | North Atlantic States. | | South Atlantic States. | | N. Central States east of Miss. R. | | N. Central States west of Miss. R. | | South Central States. | | Far Western States. | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1915 | 1914 | 1915 | 1914 | 1915 | 1914 | 1915 | 1914 | 1915 | 1914 | 1915 | 1914 | 1915 | 1914 |
| | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* |
| January | 66.2 | 69.6 | 76.6 | 78.2 | 81.5 | 85.1 | 63.3 | 62.4 | 58.5 | 60.9 | 75.1 | 81.8 | 74.1 | 81.6 |
| February | 72.8 | 68.3 | 81.2 | 74.0 | 85.8 | 86.1 | 69.9 | 60.6 | 67.1 | 59.0 | 79.4 | 81.1 | 78.1 | 81.8 |
| March | 75.1 | 69.1 | 84.6 | 73.8 | 92.4 | 88.6 | 70.1 | 61.2 | 67.0 | 58.8 | 86.9 | 83.1 | 82.2 | 76.1 |
| April | 75.1 | 70.7 | 84.5 | 75.2 | 92.2 | 89.6 | 70.3 | 62.8 | 66.1 | 61.3 | 88.2 | 83.6 | 87.1 | 77.2 |
| May | 77.7 | 72.1 | 85.3 | 76.7 | 94.3 | 91.1 | 73.7 | 64.4 | 68.8 | 62.3 | 90.0 | 85.3 | 82.9 | 80.5 |
| June | 77.9 | 75.0 | 85.8 | 78.3 | 95.8 | 93.2 | 73.5 | 67.5 | 68.6 | 65.1 | 91.0 | 88.6 | 82.3 | 81.4 |
| July | 77.7 | 75.5 | 84.8 | 80.5 | 96.4 | 94.0 | 73.2 | 68.8 | 68.8 | 65.2 | 90.3 | 88.7 | 77.9 | 81.8 |
| August | 78.9 | 76.8 | 86.9 | 80.8 | 96.8 | 94.0 | 76.0 | 71.9 | 71.5 | 65.6 | 86.5 | 89.7 | 80.5 | 79.3 |
| September | 77.3 | 81.5 | 87.6 | 90.8 | 95.5 | 98.6 | 75.3 | 78.1 | 70.9 | 72.3 | 81.8 | 88.7 | 75.1 | 80.9 |
| October | 70.5 | 78.2 | 84.5 | 89.3 | 89.2 | 96.5 | 70.3 | 74.6 | 64.9 | 68.9 | 69.6 | 85.2 | 71.2 | 80.4 |
| November | 61.9 | 70.6 | 76.5 | 80.0 | 79.4 | 89.0 | 61.7 | 67.1 | 57.8 | 61.6 | 58.9 | 76.9 | 65.7 | 80.3 |
| December | 57.5 | 64.4 | 73.7 | 76.6 | 75.1 | 82.9 | 55.3 | 61.2 | 52.0 | 55.9 | 58.2 | 71.5 | 67.1 | 70.4 |
| Average | 71.4 | 71.7 | 82.4 | 79.1 | 89.2 | 90.6 | 69.1 | 65.3 | 64.3 | 62.2 | 74.9 | 81.4 | 76.8 | 79.1 |

**Table 10.**—*Corn (including meal): International trade, calendar years 1912–1914.*

[The item *maicena* or *maizena* is included as "Corn and corn meal."]

General Note.—Substantially the international trade of the world. It should not be expected that the world export and import totals for any year will agree. Among sources of disagreement are these: (1) Different periods of time covered in the "year" of the various countries; (2) Imports received in year subsequent to year of export; (3) want of uniformity in classification of goods among countries; (4) different practices and varying degrees of failure in recording countries of origin and ultimate destination; (5) different practices of recording reexported goods; (6) opposite methods of treating free ports; (7) clerical errors, which, it may be assumed, are not infrequent.

The exports given are domestic exports, and the imports given are imports for consumption as far as it is feasible and consistent so to express the facts. While there are some inevitable omissions, on the other hand there are some duplications because of reshipments that do not appear as such in official reports. For the United Kingdom, import figures refer to imports for consumption, when available, otherwise total imports, less exports, of "foreign and colonial merchandise." Figures for the United States include Alaska, Porto Rico, and Hawaii.

EXPORTS.

[000 omitted.]

| Country. | 1912 | 1913 | 1914 (prelim.). | Country. | 1912 | 1913 | 1914 (prelim.). |
|---|---|---|---|---|---|---|---|
| | *Bushels.* | *Bushels.* | *Bushels.* | | *Bushels.* | *Bushels.* | *Bushels.* |
| Argentina | 190,353 | 189,240 | 139,461 | Russia | 30,289 | 22,900 | 11,251 |
| Austria-Hungary | 38 | 30 | .......... | Serbia [1] | 4,627 | 4,627 | .......... |
| Belgium | 10,999 | 6,134 | .......... | United States | 32,627 | 46,923 | 17,022 |
| British South Africa | 3,756 | 741 | 4,778 | Uruguay | 14 | 14 | 3 |
| Bulgaria | 11,362 | 11,362 | .......... | Other countries | 6,538 | 7,225 | .......... |
| Netherlands | 13,557 | 11,846 | 4,337 | | | | |
| Roumania | 42,725 | 42,725 | .......... | Total | 346,885 | 343,767 | .......... |

IMPORTS.

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Austria-Hungary | 29,108 | 25,844 | .......... | Netherlands | 38,262 | 39,467 | 25,512 |
| Belgium | 32,021 | 25,036 | .......... | Norway | 1,471 | 1,149 | 1,609 |
| British South Africa | 114 | 818 | 6 | Portugal | 952 | 4,114 | .......... |
| Canada | 9,331 | 9,041 | 8,347 | Russia | 279 | 662 | 418 |
| Cuba | 2,890 | 3,198 | 2,890 | Spain | 6,851 | 22,403 | 7,960 |
| Denmark | 13,809 | 15,938 | 10,346 | Sweden | 3,975 | 2,395 | 2,173 |
| Egypt | 110 | 1,184 | 687 | Switzerland | 4,342 | 4,785 | 3,068 |
| France | 23,951 | 23,279 | 16,321 | United Kingdom | 88,166 | 97,721 | 75,499 |
| Germany | 44,973 | 36,165 | .......... | Other countries | 5,668 | 9,422 | .......... |
| Italy | 21,294 | 13,847 | 3,308 | | | | |
| Mexico | 1,548 | 1,548 | .......... | Total | 329,115 | 338,016 | .......... |

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[1] Data for 1911.

## WHEAT.

TABLE 11.—*Wheat: Area and production of undermentioned countries, 1913–1915.*

| Country. | Area |  |  | Production. |  |  |
|---|---|---|---|---|---|---|
|  | 1913 | 1914 | 1915 | 1913 | 1914 | 1915 |
| NORTH AMERICA. | *Acres.* | *Acres.* | *Acres.* | *Bushels.* | *Bushels.* | *Bushels.* |
| United States | 50,184,000 | 53,541,000 | 59,898,000 | 763,380,000 | 891,017,000 | 1,011,505,000 |
| Canada: |  |  |  |  |  |  |
| New Brunswick | 13,000 | 13,000 | 14,000 | 269,000 | 234,000 | 301,000 |
| Ontario | 850,000 | 834,000 | 1,093,000 | 19,851,000 | 17,658,000 | 28,797,000 |
| Manitoba | 2,804,000 | 2,616,000 | 3,342,000 | 53,331,000 | 38,605,000 | 84,282,000 |
| Saskatchewan | 5,720,000 | 5,348,000 | 6,838,000 | 121,559,000 | 73,494,000 | 171,146,000 |
| Alberta | 1,512,000 | 1,371,000 | 1,564,000 | 34,372,000 | 28,859,000 | 48,772,000 |
| Other | 117,000 | 111,000 | 135,000 | 2,335,000 | 2,430,000 | 2,900,000 |
| Total Canada | 11,016,000 | 10,293,000 | 12,986,000 | 231,717,000 | 161,280,000 | 336,258,000 |
| Mexico | (1) | 1,478,000 | (1) | 4,000,000 | 4,389,000 | 4,000,000 |
| Total | ............ | ............ | ............ | 999,097,000 | 1,056,686,000 | 1,351,763,000 |
| SOUTH AMERICA. |  |  |  |  |  |  |
| Argentina | 17,096,000 | 16,243,000 | 15,471,000 | 187,391,000 | 113,904,000 | 178,221,000 |
| Chile | 1,103,000 | 1,018,000 | 1,278,000 | 23,575,000 | 16,403,000 | 19,002,000 |
| Uruguay | 816,000 | 911,000 | 778,000 | 5,461,000 | 5,887,000 | 3,417,000 |
| Total | 19,015,000 | 18,172,000 | 17,527,000 | 216,427,000 | 136,194,000 | 200,640,000 |
| EUROPE. |  |  |  |  |  |  |
| Austria-Hungary: |  |  |  |  |  |  |
| Austria | 2,997,000 | (1) | (1) | 60,109,000 | 55,000,000 | 60,000,000 |
| Hungary proper | 7,700,000 | 8,016,000 | 8,288,000 | 151,348,000 | 105,237,000 | 152,934,000 |
| Croatia-Slavonia | 837,000 | 741,000 | (1) | 16,899,000 | 7,716,000 | 15,000,000 |
| Bosnia-Herzegovina | 320,000 | (1) | (1) | 3,837,000 | 2,500,000 | 3,000,000 |
| Total Austria-Hungary | 11,854,000 | ............ | ............ | 232,193,000 | 170,453,000 | 230,934,000 |
| Belgium | 394,000 | 400,000 | (1) | 14,769,000 | 13,973,000 | 8,000,000 |
| Bulgaria | 2,907,000 | 2,986,000 | (1) | 51,256,000 | 29,654,000 | 46,212,000 |
| Denmark | [2] 134,000 | (1) | 164,000 | 6,692,000 | 5,785,000 | 7,975,000 |
| Finland | (1) | (1) | (1) | 130,000 | 130,000 | 130,000 |
| France | 16,166,000 | 14,975,000 | 14,743,000 | 321,000,000 | 282,689,000 | 258,102,000 |
| Germany | 4,878,000 | 4,932,000 | (1) | 171,075,000 | 145,944,000 | 160,000,000 |
| Greece | (1) | (1) | (1) | 7,000,000 | 7,000,000 | 6,000,000 |
| Italy | 11,842,000 | 11,783,000 | 12,502,000 | 214,405,000 | 169,442,000 | 170,541,000 |
| Montenegro | (1) | (1) | (1) | 200,000 | 200,000 | 200,000 |
| Netherlands | 142,000 | 148,000 | 160,000 | 5,164,000 | 5,779,000 | 6,143,000 |
| Norway | [2] 12,000 | (1) | (1) | 325,000 | 269,000 | 269,000 |
| Portugal | 1,208,000 | (1) | (1) | 9,186,000 | 10,000,000 | 6,571,000 |
| Roumania | 4,011,000 | 5,218,000 | 4,705,000 | 83,236,000 | 49,270,000 | 89,241,000 |
| Russia: |  |  |  |  |  |  |
| Russia proper | 50,506,000 | ............ | ............ | 656,324,000 | ............ | ............ |
| Poland | 1,312,000 | ............ | ............ | 24,011,000 | ............ | ............ |
| Northern Caucasia | 10,251,000 | ............ | ............ | 157,642,000 | ............ | ............ |
| Total Russia, European | 62,069,000 | [3] 75,902,000 | [3] 73,327,000 | 837,977,000 | [4] 746,873,000 | [4] 833,965,000 |
| Serbia | 573,000 | (1) | ............ | 10,524,000 | 9,000,000 | 10,000,000 |
| Spain | 9,644,000 | 9,681,000 | 10,037,000 | 112,401,000 | 116,089,000 | 139,298,000 |
| Sweden | 288,000 | 269,000 | (1) | 9,330,000 | 8,472,000 | 9,000,000 |
| Switzerland | 103,000 | 113,000 | (1) | 3,546,000 | 3,277,000 | 3,880,000 |
| Turkey (European) | (1) | (1) | (1) | 18,000,000 | 18,000,000 | 18,000,000 |
| United Kingdom: |  |  |  |  |  |  |
| England | 1,663,000 | 1,770,000 | 2,122,000 | 53,736,000 | 59,217,000 | 68,652,000 |
| Wales | 38,000 | 37,000 | 49,000 | 1,075,000 | 1,082,000 | 1,415,000 |
| Scotland | 55,000 | 61,000 | 77,000 | 2,335,000 | 2,642,000 | 3,053,000 |
| Ireland | 34,000 | 37,000 | 87,000 | 1,295,000 | 1,415,000 | 3,238,000 |
| Total United Kingdom | 1,790,000 | 1,905,000 | 2,335,000 | 58,441,000 | 64,356,000 | 76,358,000 |
| Total | ............ | ............ | ............ | 2,166,850,000 | 1,856,655,000 | 2,080,819,000 |

[1] No official statistics

[2] Census of 1910.

[3] 63 governments of European and 10 of Asiatic Russia.

[4] 51 governments of European and 10 of Asiatic Russia.

## WHEAT—Continued.

**Table 11.**—*Wheat: Area and production of undermentioned countries, 1913–1915*—**Contd.**

| Country. | Area. | | | Production. | | |
|---|---|---|---|---|---|---|
| | 1913 | 1914 | 1915 | 1913 | 1914 | 1915 |
| ASIA. | | | | | | |
| **India:** | *Acres.* | *Acres.* | *Acres.* | *Bushels.* | *Bushels.* | *Bushels.* |
| British[1] | 29,524,000 | 28,475,000 | 32,230,000 | 362,693,000 | 312,032,000 | 383,376,000 |
| Native States | 4,392,000 | (2) | (2) | (2) | (2) | (2) |
| Total | 33,916,000 | ............ | ............ | ............ | ............ | ............ |
| **Cyprus** | (2) | (2) | (2) | 2,779,000 | 2,500,000 | 2,000,000 |
| **Japanese Empire:** | | | | | | |
| Japan | 1,185,000 | 1,174,000 | 1,176,000 | 26,757,000 | 22,975,000 | 23,669,000 |
| Formosa | 14,000 | 16,000 | (1) | 164,000 | 195,000 | 200,000 |
| Total | 1,199,000 | 1,190,000 | ............ | 26,921,000 | 23,170,000 | 23,869,000 |
| **Persia** | (2) | (2) | (2) | 16,000,000 | 14,000,000 | 16,000,000 |
| **Russia:** | | | | | | |
| Central Asia (4 governments) | 4,854,000 | ............ | ............ | 39,216,000 | ............ | ............ |
| Siberia (4 governments) | 7,497,000 | ............ | ............ | 75,297,000 | ............ | ............ |
| Transcaucasia (1 government) | 9,000 | ............ | ............ | 115,000 | ............ | ............ |
| Total | 12,360,000 | (3) | (3) | 114,628,000 | (3) | (3) |
| **Turkey** (Asia Minor only) | (2) | (2) | (2) | 35,000,000 | 35,000,000 | 35,000,000 |
| Total | ............ | ............ | ............ | 558,021,000 | 386,702,000 | 460,245,000 |
| AFRICA. | | | | | | |
| **Algeria** | 3,448,000 | 3,368,000 | 3,209,000 | 36,848,000 | 30,000,000 | 34,654,000 |
| **Egypt** | 1,355,000 | 1,301,000 | 1,582,000 | 38,426,000 | 32,831,000 | 39,148,000 |
| **Tunis** | 1,235,000 | 1,010,000 | 1,112,000 | 5,511,000 | 2,205,000 | 11,023,000 |
| **Union of South Africa** | (2) | (2) | (2) | [4] 6,034,000 | [4] 6,034,000 | [4] 6,034,000 |
| Total | ............ | ............ | ............ | 86,819,000 | 71,070,000 | 90,859,000 |
| AUSTRALASIA. | | | | | | |
| Australia: | | | | | | |
| Queensland | 125,000 | 132,000 | 127,000 | 2,038,000 | 1,825,000 | 1,635,000 |
| New South Wales | 2,231,000 | 3,205,000 | 3,429,000 | 33,511,000 | 39,219,000 | 13,187,000 |
| Victoria | 2,085,000 | 2,566,000 | 2,863,000 | 27,050,000 | 33,974,000 | 4,065,000 |
| South Australia | 2,080,000 | 2,268,000 | 2,503,000 | 22,174,000 | 17,470,000 | 3,639,000 |
| Western Australia | 793,000 | 1,097,000 | 1,375,000 | 9,457,000 | 13,751,000 | 2,704,000 |
| Tasmania | 25,000 | 18,000 | 24,000 | 650,000 | 361,000 | 396,000 |
| Total Australia | 7,339,000 | 9,286,000 | 10,321,000 | 94,880,000 | 106,600,000 | 25,626,000 |
| New Zealand | 190,000 | 167,000 | 230,000 | 5,343,000 | 5,559,000 | 6,854,000 |
| Total Australasia | 7,529,000 | 9,453,000 | 10,551,000 | 100,223,000 | 112,159,000 | 32,480,000 |
| Grand total | ............ | ............ | ............ | 4,127,437,000 | 3,619,466,000 | 4,216,806,000 |

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[1] Including certain Feudatory States.
[2] No official statistics.
[3] Included in total Russia (European).
[4] Census of 1911.

## WHEAT—Continued.

TABLE 12.—*Wheat: Total production of countries mentioned in Table 11, 1891–1915.*

| Year. | Production. | Year. | Production. | Year. | Production. | Year. | Production. |
|---|---|---|---|---|---|---|---|
|  | *Bushels.* |  | *Bushels.* |  | *Bushels.* |  | *Bushels.* |
| 1891.... | 2,432,322,000 | 1898.... | 2,948,305,000 | 1905.... | 3,327,084,000 | 1912.... | 3,791,951,000 |
| 1892.... | 2,481,805,000 | 1899.... | 2,783,885,000 | 1906.... | 3,434,354,000 | 1913.... | 4,127,437,000 |
| 1893.... | 2,559,174,000 | 1900.... | 2,610,751,000 | 1907.... | 3,133,965,000 | 1914.... | 3,619,466,000 |
| 1894.... | 2,660,557,000 | 1901.... | 2,955,975,000 | 1908.... | 3,182,105,000 | 1915.... | 4,216,806,000 |
| 1895.... | 2,593,312,000 | 1902.... | 3,090,116,000 | 1909.... | 3,581,519,000 |  |  |
| 1896.... | 2,506,320,000 | 1903.... | 3,189,813,000 | 1910.... | 3,575,055,000 |  |  |
| 1897.... | 2,236,208,000 | 1904.... | 3,163,542,000 | 1911.... | 3,551,795,000 |  |  |

TABLE 13.—*Wheat: Average yield per acre of undermentioned countries, 1890–1914.*

| Year. | United States. | Russia (European).[1] | Germany.[1] | Austria.[1] | Hungary proper.[1] | France.[2] | United Kingdom.[2] |
|---|---|---|---|---|---|---|---|
| Average: | *Bushels.* | *Bushels.* | *Bushels.* | *Bushels.* | *Bushels.* | *Bushels.* | *Bushels.* |
| 1890–1899 | 13.2 | 8.9 | 24.5 | 16.2 | .......... | 18.6 | 31.2 |
| 1900–1909 | 14.1 | 9.7 | 28.9 | 18.0 | 17.5 | 20.5 | 33.1 |
| 1905 | 14.5 | 10.0 | 28.5 | 19.6 | 18.7 | 20.9 | 33.9 |
| 1906 | 15.5 | 7.7 | 30.3 | 20.3 | 22.5 | 20.2 | 34.8 |
| 1907 | 14.0 | 8.0 | 29.6 | 18.0 | 14.9 | 23.2 | 35.1 |
| 1908 | 14.0 | 8.8 | 29.7 | 21.0 | 17.5 | 19.6 | 33.4 |
| 1909 | 15.4 | 12.5 | 30.5 | 19.9 | 14.1 | 22.0 | 35.0 |
| 1910 | 13.9 | 11.2 | 29.6 | 19.2 | 19.8 | 15.9 | 31.4 |
| 1911 | 12.5 | 7.0 | 30.6 | 19.6 | 20.9 | 19.8 | 34.0 |
| 1912 | 15.9 | 10.3 | 33.6 | 22.3 | 19.8 | 21.0 | 30.0 |
| 1913 | 15.2 | 13.5 | 35.1 | 19.9 | 19.6 | 19.9 | 32.7 |
| 1914 | 16.6 | .......... | 29.6 | .......... | 13.1 | 18.9 | 33.8 |
| Average (1905–1914) | 14.8 | .......... | 30.7 | .......... | 18.1 | 20.1 | 33.4 |

[1] Bushels of 60 pounds.

[2] Winchester bushels.

## WHEAT—Continued.

### TABLE 14.—*Wheat: Acreage, production, value, exports, etc., in the United States, 1849–1915.*

NOTE.—Figures in *italics* are census returns; figures in roman are estimates of the Department of Agriculture. Estimates of acres are obtained by applying estimated percentages of increase or decrease to the published numbers of the preceding year, except that a revised base is used for applying percentage estimates whenever new census data are available.

| Year. | Acreage harvested. | Average yield per acre. | Production. | Average farm price per bushel Dec. 1. | Farm value Dec. 1. | Chicago cash price per bushel, No. 1 northern spring. | | | | Domestic exports, including flour, fiscal year beginning July 1. | Per cent of crop exported. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | December. | | Following May. | | | |
| | | | | | | Low. | High. | Low. | High. | | |
| | *Acres.* | *Bush.* | *Bushels.* | *Cents.* | *Dollars.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Bushels.* | *P. ct.* |
| *1849* | ...... | ...... | *100,486,000* | ...... | ...... | ...... | ...... | ...... | ...... | 7,535,901 | 7.5 |
| *1859* | ...... | ...... | *173,105,000* | ...... | ...... | ...... | ...... | ...... | ...... | 17,213,133 | 9.9 |
| 1866 | 15,424,000 | 9.9 | 152,000,000 | 152.7 | 232,110,000 | 120 | 145 | 185 | 211 | 12,646,941 | 8.3 |
| 1867 | 18,322,000 | 11.6 | 212,441,000 | 145.2 | 308,387,000 | 126 | 140 | 134 | 161 | 26,323.014 | 12.4 |
| 1868 | 18,460,000 | 12.1 | 224,037,000 | 108.5 | 243,033,000 | 80 | 88 | 87 | 96 | 29,717,201 | 13.3 |
| 1869 | 19,181,000 | 13.6 | 260,147,000 | 76.5 | 199,025,000 | 63 | 76 | 79 | 92 | 53,900,780 | 20.7 |
| *1869* | ...... | ...... | *287,746,000* | ...... | ...... | ...... | ...... | ...... | ...... | ...... | ...... |
| 1870 | 18,993,000 | 12.4 | 235,885,000 | 94.4 | 222,767,000 | 91 | 98 | 113 | 120 | 52,574,111 | 22.3 |
| 1871 | 19,944,000 | 11.6 | 230,722,000 | 114.5 | 264,076,000 | 107 | 111 | 120 | 143 | 38,995,755 | 16.9 |
| 1872 | 20,858,000 | 12.0 | 249,997,000 | 111.4 | 278,522,000 | 97 | 108 | 112 | 122 | 52,014,715 | 20.8 |
| 1873 | 22,172,000 | 12.7 | 281,255,000 | 106.9 | 300,670,000 | 96 | 106 | 105 | 114 | 91,510,398 | 32.5 |
| 1874 | 24,967,000 | 12.3 | 308,103,000 | 86.3 | 265,881,000 | 78 | 83 | 78 | 94 | 72,912,817 | 23.7 |
| 1875 | 26,382,000 | 11.1 | 292,136,000 | 89.5 | 261,397,000 | 82 | 91 | 89 | 100 | 74,750,682 | 25.6 |
| 1876 | 27,627,000 | 10.5 | 289,356,000 | 97.0 | 280,743,000 | 104 | 117 | 130 | 172 | 57,043,936 | 19.7 |
| 1877 | 26,278,000 | 13.9 | 364,194,000 | 105.7 | 385,089,000 | 103 | 108 | 98 | 113 | 92,141,626 | 25.3 |
| 1878 | 32,109,000 | 13.1 | 420,122,000 | 77.6 | 325,814,000 | 81 | 84 | 91 | 102 | 150,502,506 | 35.8 |
| 1879 | 32,546,000 | 13.8 | 448,757,000 | 110.8 | 497,030,000 | 122 | 133½ | 112½ | 119 | 180,304,181 | 40.2 |
| *1879* | *35,430,000* | *13.9* | *459,483,000* | ...... | ...... | ...... | ...... | ...... | ...... | ...... | ...... |
| 1880 | 37,987,000 | 13.1 | 498,550,000 | 95.1 | 474,202,000 | 93½ | 109¾ | 101 | 112⅝ | 186,321,514 | 37.4 |
| 1881 | 37,709,000 | 10.2 | 383,280,000 | 119.2 | 456,880,000 | 124¾ | 129 | 123 | 140 | 121,892,389 | 31.8 |
| 1882 | 37,067,000 | 13.6 | 504,185,000 | 88.4 | 445,602,000 | 91⅛ | 94⅞ | 108 | 113⅞ | 147,811,316 | 29.3 |
| 1883 | 36,456,000 | 11.6 | 421,086,000 | 91.1 | 383,649,000 | 94⅝ | 99¼ | 85 | 94¼ | 111,534,182 | 26.5 |
| 1884 | 39,476,000 | 13.0 | 512,765,000 | 64.5 | 330,862,000 | 69½ | 76⅝ | 85⅝ | 90¾ | 132,570,366 | 25.9 |
| 1885 | 34,189,000 | 10.4 | 357,112,000 | 77.1 | 275,320,000 | 82⅞ | 89 | 72⅛ | 79 | 94,565,793 | 26.5 |
| 1886 | 36,806,000 | 12.4 | 457,218,000 | 68.7 | 314,226,000 | 75⅛ | 79½ | 80⅞ | 88⅛ | 153,804,969 | 33.6 |
| 1887 | 37,642,000 | 12.1 | 456,329,000 | 68.1 | 310,613,000 | 75⅜ | 79¼ | 81⅛ | 89⅞ | 119,625,344 | 26.2 |
| 1888 | 37,336,000 | 11.1 | 415,868,000 | 92.6 | 385,248,000 | 96⅝ | 105½ | 77½ | 95½ | 88,600,743 | 21.3 |
| 1889 | 38,124,000 | 12.9 | 490,560,000 | 69.8 | 342,492,000 | 76¾ | 80½ | 89¼ | 100 | 109,430,467 | 22.3 |
| *1889* | *33,580,000* | 13.9 | *468,374,000* | ...... | ...... | ...... | ...... | ...... | ...... | ...... | ...... |
| 1890 | 36,087,000 | 11.1 | 399,262,000 | 83.8 | 334,774,000 | 87⅛ | 92¾ | 98⅞ | 108¼ | 106,181,316 | 26.6 |
| 1891 | 39,917,000 | 15.3 | 611,781,000 | 83.9 | 513,473,000 | 89⅝ | 93¼ | 80 | 85¾ | 225,665,811 | 36.9 |
| 1892 | 38,554,000 | 13.4 | 515,947,000 | 62.4 | 322,112,000 | 69½ | 73 | 68¼ | 76¼ | 191,912,635 | 37.2 |
| 1893 | 34,629,000 | 11.4 | 396,132,000 | 53.8 | 213,171,000 | 59⅛ | 64¼ | 52⅛ | 60½ | 164,283,129 | 41.5 |
| 1894 | 34,882,000 | 13.2 | 460,267,000 | 49.1 | 225,902,000 | 52⅜ | 63⅝ | 60⅞ | 85⅝ | 144,812,718 | 31.5 |
| 1895 | 34,047,000 | 13.7 | 467,103,000 | 50.9 | 237,939,000 | 53⅞ | 64⅞ | 57⅛ | 67⅝ | 126,443,968 | 27.1 |
| 1896 | 34,619,000 | 12.4 | 427,684,000 | 72.6 | 310,598,000 | 74⅝ | 93⅛ | 68¾ | 97⅞ | 145,124,972 | 33.9 |
| 1897 | 39,465,000 | 13.4 | 530,149,000 | 80.8 | 428,547,000 | 92 | 109 | 117 | 185 | 217,306,005 | 41.0 |
| 1898 | 44,055,000 | 15.3 | 675,149,000 | 58.2 | 392,770,000 | 62¾ | 70 | 68⅞ | 79½ | 222,618,420 | 33.0 |
| 1899 | 44,593,000 | 12.3 | 547,304,000 | 58.4 | 319,545,000 | 64 | 69½ | 63⅝ | 67½ | 186,096,762 | 34.0 |
| *1899* | *52,589,000* | *12.5* | *658,534,000* | ...... | ...... | ...... | ...... | ...... | ...... | ...... | ...... |
| 1900 | 42,495,000 | 12.3 | 522,230,000 | 61.9 | 323,515,000 | 69¼ | 74⅝ | 70 | 75⅛ | 215,990,073 | 41.4 |
| 1901 | 49,896,000 | 15.0 | 748,460,000 | 62.4 | 467,360,000 | 73 | 79½ | 72⅝ | 76¼ | 234,772,516 | 31.4 |
| 1902 | 46,202,000 | 14.5 | .670,063,000 | 63.0 | 422,224,000 | 71⅞ | 77¾ | 74⅞ | 80⅝ | 202,905,598 | 30.3 |
| 1903 | 49,465,000 | 12.9 | 637,822,000 | 69.5 | 443,025,000 | 77¾ | 87 | 87⅞ | 101¼ | 120,727,613 | 18.9 |
| 1904 | 44,075,000 | 12.5 | 552,400,000 | 92.4 | 510,490,000 | 115 | 122 | 89¼ | 113⅞ | 44,112,910 | 8.0 |
| 1905 | 47,854,000 | 14.5 | 692,979,000 | 74.8 | 518,373,000 | 82½ | 90 | 80¼ | 87¼ | 97,609,007 | 14.1 |
| 1906 | 47,306,000 | 15.5 | 735,261,000 | 66.7 | 490,333,000 | ...... | ...... | 84 | 106 | 146,700,425 | 20.0 |
| 1907 | 45,211,000 | 14.0 | 634,087,000 | 87.4 | 554,437,000 | ...... | ...... | ...... | ...... | 163,043,669 | 25.7 |
| 1908 | 47,557,000 | 14.0 | 664,602,000 | 92.8 | 616,826,000 | 106½ | 112 | 126½ | 137 | 114,268,468 | 17.2 |
| 1909 | 46,723,000 | 15.8 | 737,189,000 | ...... | ...... | ...... | ...... | ...... | ...... | ...... | ...... |
| *1909* | *44,261,000* | *15.4* | *683,366,000* | 98.6 | 673,659,000 | 106 | 119¾ | 100 | 119¼ | 87,364,318 | 12.8 |
| 1910[1] | 45,681,000 | 13.9 | 635,121,000 | 88.3 | 561,051,000 | 104 | 110 | 98 | 106 | 69,311,760 | 10.9 |
| 1911 | 49,543,000 | 12.5 | 621,338,000 | 87.4 | 543,063,000 | 105 | 110 | 115 | 122 | 79,689,404 | 12.8 |
| 1912 | 45,814,000 | 15.9 | 730,267,000 | 76.0 | 555,280,000 | 85 | 90¾ | 90½ | 96 | 142,879,596 | 19.6 |
| 1913 | 50,184,000 | 15.2 | 763,380,000 | 79.9 | 610,122,000 | 89½ | 93 | 96 | 100 | 145,590,349 | 19.1 |
| 1914 | 53,541,000 | 16.6 | 891,017,000 | 98.6 | 878,680,000 | 115 | 131 | 141 | 164½ | 332,464,975 | 37.3 |
| 1915 | 59,898,000 | 16.9 | 1,011,505,000 | 92.0 | 930,302,000 | 106 | 128½ | ...... | ...... | ...... | ...... |

[1] Figures adjusted to census basis.

## WHEAT—Continued.

TABLE 15.—*Winter and spring wheat: Acreage, production, and farm value Dec. 1, by States in 1915, and United States totals, 1890–1915.*

| State and year. | Winter wheat. | | | | | Spring wheat. | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Acreage. | Average yield per acre. | Production. | Average farm price Dec.1. | Farm value Dec. 1. | Acreage. | Average yield per acre. | Production. | Average farm price Dec.1. | Farm value Dec. 1. |
| | *Acres.* | *Bu.* | *Bushels.* | *Cts.* | *Dollars.* | *Acres.* | *Bu.* | *Bushels.* | *Cts.* | *Dollars.* |
| Me | ........ | ..... | ........ | ..... | ........ | 4,000 | 28.0 | 112,000 | 11.2 | 125,000 |
| Vt | ........ | ..... | ........ | ..... | ........ | 1,000 | 30.0 | 30,000 | 10.7 | 32,000 |
| N.Y | 390,000 | 25.0 | 9,750,000 | 10.1 | 9,848,000 | ........ | ..... | ........ | ..... | ........ |
| N.J | 78,000 | 20.0 | 1,560,000 | 10.6 | 1,654,000 | ........ | ..... | ........ | ..... | ........ |
| Pa | 1,330,000 | 18.5 | 24,605,000 | 10.4 | 25,589,000 | ........ | ..... | ........ | ..... | ........ |
| Del | 125,000 | 15.0 | 1,875,000 | 10.9 | 2,044,000 | ........ | ..... | ........ | ..... | ........ |
| Md | 638,000 | 16.1 | 10,272,000 | 10.5 | 10,786,000 | ........ | ..... | ........ | ..... | ........ |
| Va | 1,230,000 | 13.8 | 16,974,000 | 10.8 | 18,332,000 | ........ | ..... | ........ | ..... | ........ |
| W.Va | 300,000 | 15.0 | 4,500,000 | 10.8 | 4,860,000 | ........ | ..... | ........ | ..... | ........ |
| N.C | 950,000 | 10.9 | 10,355,000 | 12.0 | 12,426,000 | ........ | ..... | ........ | ..... | ........ |
| S.C | 225,000 | 10.8 | 2,430,000 | 13.8 | 3,353,000 | ........ | ..... | ........ | ..... | ........ |
| Ga | 325,000 | 11.0 | 3,575,000 | 12.9 | 4,612,000 | ........ | ..... | ........ | ..... | ........ |
| Ohio | 1,980,000 | 20.3 | 40,194,000 | 10.4 | 41,802,000 | ........ | ..... | ........ | ..... | ........ |
| Ind | 2,750,000 | 17.2 | 47,300,000 | 10.2 | 48,246,000 | ........ | ..... | ........ | ..... | ........ |
| Ill | 2,800,000 | 19.0 | 53,200,000 | 10.0 | 53,200,000 | ........ | ..... | ........ | ..... | ........ |
| Mich | 960,000 | 21.3 | 20,448,000 | 10.1 | 20,652,000 | ........ | ..... | ........ | ..... | ........ |
| Wis | 100,000 | 23.0 | 2,300,000 | 9.5 | 2,185,000 | 105,000 | 22.5 | 2,362,000 | 9.5 | 2,244,000 |
| Minn | 60,000 | 19.5 | 1,170,000 | 9.0 | 1,053,000 | 4,250,000 | 17.0 | 72,250,000 | 9.0 | 65,025,000 |
| Iowa | 510,000 | 21.5 | 10,965,000 | 8.7 | 9,540,000 | 275,000 | 16.7 | 4,592,000 | 8.7 | 3,995,000 |
| Mo | 2,773,000 | 12.3 | 34,108,000 | 9.8 | 33,426,000 | ........ | ..... | ........ | ..... | ........ |
| N. Dak | ........ | ..... | ........ | ..... | ........ | 8,350,000 | 18.2 | 151,970,000 | 8.7 | 132,214,000 |
| S. Dak | 125,000 | 20.5 | 2,562,000 | 8.6 | 2,203,000 | 3,600,000 | 17.0 | 61,200,000 | 8.6 | 52,632,000 |
| Nebr | 3,601,000 | 18.5 | 66,618,000 | 8.4 | 55,959,000 | 346,000 | 16.0 | 5,536,000 | 8.4 | 4,650,000 |
| Kans | 8,475,000 | 12.5 | 105,938,000 | 8.9 | 94,285,000 | 50,000 | 12.0 | 600,000 | 8.9 | 534,000 |
| Ky | 900,000 | 11.0 | 9,900,000 | 10.5 | 10,395,000 | ........ | ..... | ........ | ..... | ........ |
| Tenn | 860,000 | 10.5 | 9,030,000 | 10.8 | 9,752,000 | ........ | ..... | ........ | ..... | ........ |
| Ala | 100,000 | 12.0 | 1,200,000 | 12.5 | 1,500,000 | ........ | ..... | ........ | ..... | ........ |
| Miss | 5,000 | 20.0 | 100,000 | 10.5 | 105,000 | ........ | ..... | ........ | ..... | ........ |
| Tex | 1,475,000 | 15.5 | 22,862,000 | 10.7 | 24,462,000 | ........ | ..... | ........ | ..... | ........ |
| Okla | 3,150,000 | 11.6 | 36,540,000 | 8.9 | 32,521,000 | ........ | ..... | ........ | ..... | ........ |
| Ark | 220,000 | 12.5 | 2,750,000 | 10.1 | 2,778,000 | ........ | ..... | ........ | ..... | ........ |
| Mont | 675,000 | 27.0 | 18,225,000 | 7.8 | 14,216,000 | 600,000 | 26.0 | 15,600,000 | 7.8 | 12,168,000 |
| Wyo | 60,000 | 26.0 | 1,560,000 | 7.8 | 1,217,000 | 65,000 | 27.0 | 1,755,000 | 7.8 | 1,369,000 |
| Colo | 310,000 | 26.0 | 8,060,000 | 8.0 | 6,448,000 | 250,000 | 21.0 | 5,250,000 | 8.0 | 4,200,000 |
| N. Mex | 52,000 | 22.0 | 1,144,000 | 9.0 | 1,030,000 | 45,000 | 22.5 | 1,012,000 | 9.0 | 911,000 |
| Ariz | 39,000 | 28.0 | 1,092,000 | 11.5 | 1,256,000 | ........ | ..... | ........ | ..... | ........ |
| Utah | 245,000 | 25.0 | 6,125,000 | 8.6 | 5,268,000 | 75,000 | 28.0 | 2,100,000 | 8.6 | 1,806,000 |
| Nev | 22,000 | 26.0 | 572,000 | 9.5 | 543,000 | 34,000 | 32.0 | 1,088,000 | 9.5 | 1,034,000 |
| Idaho | 390,000 | 29.0 | 11,310,000 | 8.0 | 9,048,000 | 280,000 | 26.5 | 7,420,000 | 8.0 | 5,936,000 |
| Wash | 1,110,000 | 27.6 | 30,636,000 | 8.2 | 25,122,000 | 890,000 | 22.2 | 19,758,000 | 8.2 | 16,202,000 |
| Oreg | 675,000 | 24.0 | 16,200,000 | 8.4 | 13,608,000 | 225,000 | 17.0 | 3,825,000 | 8.4 | 3,213,000 |
| Cal | 440,000 | 16.0 | 7,040,000 | 9.5 | 6,688,000 | ........ | ..... | ........ | ..... | ........ |
| U.S | 40,453,000 | 16.2 | 655,045,000 | 95.0 | 622,012,000 | 19,445,000 | 18.3 | 356,460,000 | 86.5 | 308,290,000 |
| 1914 | 36,008,000 | 19.0 | 684,990,000 | 98.6 | 675,623,000 | 17,533,000 | 11.8 | 206,027,000 | 98.6 | 203,057,000 |
| 1913 | 31,699,000 | 16.5 | 523,561,000 | 82.9 | 433,995,000 | 18,485,000 | 13.0 | 239,819,000 | 73.4 | 176,127,000 |
| 1912 | 26,571,000 | 15.1 | 399,919,000 | 80.9 | 323,572,000 | 19,243,000 | 17.2 | 330,348,000 | 70.1 | 231,708,000 |
| 1911 | 29,162,000 | 14.8 | 430,656,000 | 88.0 | 379,151,000 | 20,381,000 | 9.4 | 190,682,000 | 86.0 | 163,912,000 |
| 1910 | 27,329,000 | 15.9 | 434,142,000 | 88.1 | 382,318,000 | 18,352,000 | 11.0 | 200,979,000 | 88.9 | 178,733,000 |
| 1909[1] | *27,017,000* | *15.5* | *417,781,000* | 102.4 | 427,872,000 | *17,243,000* | *15.4* | *265,569,000* | 92.6 | 245,787,000 |
| 1908 | 30,349,000 | 14.4 | 437,908,000 | 93.7 | 410,330,000 | 17,208,000 | 13.2 | 226,694,000 | 91.1 | 206,496,000 |
| 1907 | 28,132,000 | 14.6 | 409,442,000 | 88.2 | 361,217,000 | 17,079,000 | 13.2 | 224,645,000 | 86.0 | 193,220,000 |
| 1906 | 29,600,000 | 16.7 | 492,888,000 | 68.3 | 336,435,000 | 17,706,000 | 13.7 | 242,373,000 | 63.5 | 153,898,000 |
| 1905 | 29,864,000 | 14.3 | 428,462,000 | 78.2 | 334,987,000 | 17,990,000 | 14.7 | 264,517,000 | 69.3 | 183,386,000 |
| 1904 | 26,866,000 | 12.4 | 332,935,000 | 97.8 | 325,611,000 | 17,209,000 | 12.8 | 219,464,000 | 84.2 | 184,879,000 |
| 1903 | 32,511,000 | 12.3 | 399,867,000 | 71.6 | 286,243,000 | 16,954,000 | 14.0 | 237,955,000 | 65.9 | 156,782,000 |
| 1902 | 28,581,000 | 14.4 | 411,789,000 | 64.8 | 266,727,000 | 17,621,000 | 14.7 | 258,274,000 | 60.2 | 155,497,000 |
| 1901 | 30,240,000 | 15.2 | 458,835,000 | 66.1 | 303,227,000 | 19,656,000 | 14.7 | 289,626,000 | 56.7 | 164,133,000 |
| 1900 | 26,236,000 | 13.3 | 350,025,000 | 63.3 | 221,668,000 | 16,259,000 | 10.6 | 172,204,000 | 59.1 | 101,847,000 |
| 1899 | 25,358,000 | 11.5 | 291,706,000 | 63.0 | 183,767,000 | 19,235,000 | 13.3 | 255,598,000 | 53.1 | 135,778,000 |
| 1898 | 25,745,000 | 14.9 | 382,492,000 | 62.2 | 237,736,000 | 18,310,000 | 16.0 | 292,657,000 | 53.0 | 155,094,000 |
| 1897 | 22,926,000 | 14.1 | 323,616,000 | 85.1 | 275,323,000 | 16,539,000 | 12.5 | 206,533,000 | 74.2 | 153,224,000 |
| 1896 | 22,794,000 | 11.8 | 267,934,000 | 77.0 | 206,270,000 | 11,825,000 | 13.5 | 159,750,000 | 65.3 | 104,328,000 |
| 1895 | 22,609,000 | 11.6 | 261,242,000 | 57.8 | 150,944,000 | 11,438,000 | 18.0 | 205,861,000 | 42.3 | 86,995,000 |
| 1894 | 23,519,000 | 14.0 | 329,290,000 | 49.8 | 164,042,000 | 11,364,000 | 11.5 | 130,977,000 | 47.2 | 61,880,000 |
| 1893 | 23,118,000 | 12.0 | 278,469,000 | 56.3 | 156,720,000 | 11,511,000 | 10.2 | 117,662,000 | 48.0 | 56,451,000 |
| 1892 | 26,209,000 | 13.7 | 359,416,000 | 65.1 | 234,037,000 | 12,345,000 | 12.7 | 156,531,000 | 56.3 | 88,075,000 |
| 1891 | 27,524,000 | 14.7 | 405,116,000 | 88.0 | 356,415,000 | 12,393,000 | 16.7 | 206,665,000 | 76.0 | 157,068,000 |
| 1890 | 23,520,000 | 10.9 | 255,874,000 | 87.5 | 223,362,000 | 12,567,000 | 11.4 | 143,890,000 | 77.4 | 111,411,000 |

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[1] Census acreage and production.

## WHEAT—Continued.

**Table 16.**—*Winter and spring wheat: Yield per acre in States producing both, for ten years.*

### WINTER WHEAT.

| State. | Yield per acre (bushels). | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 10-yr. aver., 1906–1915 | 1906 | 1907 | 1908 | 1909 | 1910 | 1911 | 1912 | 1913 | 1914 | 1915 |
| Wisconsin | 19.5 | 18.4 | 15.5 | 19.5 | 20.4 | 20.0 | 17.5 | 19.5 | 20.1 | 21.5 | 23.0 |
| Minnesota | 18.4 | ...... | ...... | ...... | ...... | ...... | ...... | ...... | 16.2 | 19.5 | 19.5 |
| Iowa | 21.4 | 22.3 | 18.5 | 21.0 | 21.6 | 21.2 | 19.7 | 23.0 | 23.4 | 21.6 | 21.5 |
| South Dakota | 14.5 | ...... | ...... | ...... | ...... | ...... | ...... | ...... | 9.0 | 14.0 | 20.5 |
| Nebraska | 18.4 | 23.2 | 19.0 | 17.8 | 19.4 | 16.5 | 13.8 | 18.0 | 18.6 | 19.3 | 18.5 |
| Kansas | 14.0 | 15.3 | 11.3 | 12.8 | 14.5 | 14.2 | 10.8 | 15.5 | 13.0 | 20.5 | 12.5 |
| Montana | 26.6 | ...... | ...... | ...... | 32.5 | 22.0 | 31.7 | 21.5 | 25.6 | 23.0 | 27.0 |
| Wyoming | 26.4 | ...... | ...... | 25.0 | 32.5 | 25.0 | 26.0 | 28.0 | 25.0 | 24.0 | 26.0 |
| Colorado | 23.9 | ...... | ...... | ...... | 29.7 | 23.0 | 18.0 | 24.5 | 21.1 | 25.0 | 26.0 |
| New Mexico | 21.8 | ...... | ...... | ...... | ...... | 20.0 | 25.0 | 20.0 | 18.6 | 25.0 | 22.0 |
| Arizona | 28.6 | ...... | ...... | ...... | ...... | 22.3 | 30.0 | 31.0 | 32.0 | 28.0 | 28.0 |
| Utah | 23.1 | ...... | ...... | 23.0 | 24.0 | 20.5 | 20.0 | 24.0 | 23.0 | 25.0 | 25.0 |
| Nevada | 25.2 | ...... | ...... | ...... | 24.0 | 24.0 | 23.0 | 27.5 | 23.0 | 29.0 | 26.0 |
| Idaho | 27.8 | 25.4 | 26.0 | 30.0 | 29.0 | 23.7 | 31.5 | 28.7 | 27.4 | 27.5 | 29.0 |
| Washington | 26.0 | 24.1 | 29.5 | 24.5 | 25.8 | 20.5 | 27.3 | 27.6 | 27.0 | 26.5 | 27.6 |
| Oregon | 23.2 | 22.3 | 25.5 | 23.2 | 21.0 | 23.7 | 22.2 | 26.8 | 21.4 | 22.0 | 24.0 |
| United States | 15.9 | 16.7 | 14.6 | 14.4 | 15.8 | 15.9 | 14.8 | 15.1 | 16.5 | 19.0 | 16.2 |

### SPRING WHEAT.

| State. | 10-yr. aver., 1906–1915 | 1906 | 1907 | 1908 | 1909 | 1910 | 1911 | 1912 | 1913 | 1914 | 1915 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Wisconsin | 17.6 | 15.7 | 13.5 | 17.5 | 19.0 | 18.7 | 14.5 | 18.5 | 18.6 | 17.0 | 22.5 |
| Minnesota | 13.9 | 10.9 | 13.0 | 12.8 | 16.8 | 16.0 | 10.1 | 15.5 | 16.2 | 10.5 | 17.0 |
| Iowa | 15.7 | 14.9 | 12.8 | 15.5 | 14.7 | 20.9 | 13.8 | 17.0 | 17.0 | 13.5 | 16.7 |
| South Dakota | 11.8 | 13.4 | 11.2 | 12.8 | 14.1 | 12.8 | 4.0 | 14.2 | 9.0 | 9.0 | 17.0 |
| Nebraska | 13.1 | 14.7 | 12.0 | 13.0 | 14.0 | 13.9 | 10.0 | 14.1 | 12.0 | 11.5 | 16.0 |
| Kansas | 9.7 | 11.4 | 5.8 | 5.5 | 11.5 | 8.4 | 4.2 | 15.0 | 8.5 | 15.0 | 12.0 |
| Montana | 24.1 | 24.0 | 28.8 | 24.2 | 28.8 | 22.0 | 25.2 | 23.5 | 21.5 | 17.0 | 26.0 |
| Wyoming | 26.4 | 28.7 | 28.5 | 25.5 | 27.0 | 25.0 | 26.0 | 29.2 | 25.0 | 22.0 | 27.0 |
| Colorado | 24.2 | 32.5 | 29.0 | 21.0 | 29.4 | 21.9 | 19.5 | 24.0 | 21.0 | 22.5 | 21.0 |
| New Mexico | 22.6 | 25.0 | 24.0 | 25.0 | 24.5 | 20.0 | 20.5 | 22.0 | 19.0 | 23.0 | 22.5 |
| Arizona | 25.0 | 25.2 | 25.9 | 26.7 | 25.0 | 22.3 | 25.0 | 28.0 | 24.5 | 23.0 | 24.0 |
| Utah | 27.5 | 27.4 | 28.8 | 27.5 | 28.5 | 25.3 | 27.0 | 29.2 | 28.0 | 25.0 | 28.0 |
| Nevada | 30.7 | 31.5 | 32.0 | 30.0 | 28.7 | 29.0 | 32.5 | 30.2 | 31.0 | 30.0 | 32.0 |
| Idaho | 25.6 | 23.5 | 24.5 | 25.4 | 26.0 | 20.4 | 29.0 | 28.3 | 28.0 | 24.0 | 26.5 |
| Washington | 19.5 | 19.6 | 24.5 | 15.0 | 20.6 | 14.5 | 19.5 | 20.4 | 19.0 | 20.0 | 22.2 |
| Oregon | 18.2 | 17.5 | 21.5 | 16.5 | 18.7 | 18.0 | 17.7 | 19.5 | 19.5 | 16.5 | 17.0 |
| United States | 13.7 | 13.7 | 13.2 | 13.2 | 15.8 | 11.0 | 9.4 | 17.2 | 13.0 | 11.8 | 18.3 |

**Table 17.**—*Wheat: Acreage, production, and total farm value, by States, 1914 and 1915.*

| State. | Thousands of acres. | | Production (thousands of bushels). | | Total value, basis Dec. 1 price (thousands of dollars). | |
|---|---|---|---|---|---|---|
| | 1915 | 1914 | 1915 | 1914 | 1915 | 1914 |
| Maine | 4 | 3 | 112 | 81 | 125 | 88 |
| Vermont | 1 | 1 | 30 | 29 | 32 | 29 |
| New York | 390 | 360 | 9,750 | 8,100 | 9,848 | 8,748 |
| New Jersey | 78 | 79 | 1,560 | 1,422 | 1,654 | 1,550 |
| Pennsylvania | 1,330 | 1,312 | 24,605 | 23,747 | 25,589 | 24,697 |
| Delaware | 125 | 114 | 1,875 | 2,337 | 2,044 | 2,547 |
| Maryland | 638 | 612 | 10,272 | 13,158 | 10,786 | 13,947 |
| Virginia | 1,230 | 779 | 16,974 | 11,296 | 18,332 | 12,200 |
| West Virginia | 300 | 236 | 4,500 | 3,540 | 4,860 | 3,823 |
| North Carolina | 950 | 611 | 10,355 | 7,332 | 12,426 | 8,578 |

## WHEAT—Continued.

TABLE 17.—*Wheat: Acreage, production, and total farm value, by States, 1914 and 1915*—Continued.

| State. | Thousands of acres. | | Production (thousands of bushels). | | Total value, basis Dec. 1 price (thousands of dollars). | |
|---|---|---|---|---|---|---|
| | 1915 | 1914 | 1915 | 1914 | 1915 | 1914 |
| South Carolina | 225 | 80 | 2,430 | 920 | 3,353 | 1,334 |
| Georgia | 325 | 140 | 3,575 | 1,694 | 4,612 | 2,270 |
| Ohio | 1,980 | 1,975 | 40,194 | 36,538 | 41,802 | 38,365 |
| Indiana | 2,750 | 2,485 | 47,300 | 43,239 | 48,246 | 44,536 |
| Illinois | 2,800 | 2,500 | 53,200 | 46,250 | 53,200 | 46,712 |
| Michigan | 960 | 879 | 20,448 | 17,316 | 20,652 | 17,835 |
| Wisconsin | 205 | 184 | 4,662 | 3,511 | 4,429 | 3,511 |
| Minnesota | 4,310 | 4,050 | 73,420 | 42,975 | 66,078 | 43,834 |
| Iowa | 785 | 810 | 15,557 | 15,066 | 13,535 | 14,463 |
| Missouri | 2,773 | 2,549 | 34,108 | 43,333 | 33,426 | 42,466 |
| North Dakota | 8,350 | 7,285 | 151,970 | 81,592 | 132,214 | 82,408 |
| South Dakota | 3,725 | 3,469 | 63,762 | 31,566 | 54,835 | 29,672 |
| Nebraska | 3,947 | 3,668 | 72,154 | 68,116 | 60,609 | 64,710 |
| Kansas | 8,525 | 8,660 | 106,538 | 177,200 | 94,819 | 168,340 |
| Kentucky | 900 | 760 | 9,900 | 12,540 | 10,395 | 12,916 |
| Tennessee | 860 | 720 | 9,030 | 11,160 | 9,752 | 11,718 |
| Alabama | 100 | 31 | 1,200 | 403 | 1,500 | 508 |
| Mississippi | 5 | 1 | 100 | 13 | 105 | 16 |
| Texas | 1,475 | 1,082 | 22,862 | 14,060 | 24,462 | 13,925 |
| Oklahoma | 3,150 | 2,525 | 36,540 | 47,975 | 32,521 | 44,137 |
| Arkansas | 220 | 125 | 2,750 | 1,625 | 2,778 | 1,609 |
| Montana | 1,275 | 910 | 33,825 | 18,356 | 26,384 | 16,704 |
| Wyoming | 125 | 100 | 3,315 | 2,290 | 2,586 | 2,038 |
| Colorado | 560 | 475 | 13,310 | 11,312 | 10,648 | 9,842 |
| New Mexico | 97 | 76 | 2,156 | 1,838 | 1,941 | 1,654 |
| Arizona | 39 | 31 | 1,092 | 868 | 1,256 | 1,085 |
| Utah | 320 | 291 | 8,225 | 7,275 | 7,074 | 6,256 |
| Nevada | 56 | 45 | 1,660 | 1,332 | 1,577 | 1,266 |
| Idaho | 670 | 549 | 18,730 | 14,362 | 14,984 | 12,495 |
| Washington | 2,000 | 1,780 | 50,394 | 41,840 | 41,324 | 41,840 |
| Oregon | 900 | 799 | 20,025 | 16,604 | 16,821 | 16,936 |
| California | 440 | 400 | 7,040 | 6,800 | 6,688 | 7,072 |
| United States | 59,898 | 53,541 | 1,011,505 | 891,017 | 930,302 | 878,680 |

TABLE 18.—*Wheat: Production and distribution in the United States, 1897–1915.*

[000 omitted.]

| Year. | Old stock on farms July 1. | Crop. | Total supplies. | Stock on farms Mar. 1 following. | Shipped out of county where grown. |
|---|---|---|---|---|---|
| | *Bushels.* | *Bushels.* | *Bushels.* | *Bushels.* | *Bushels.* |
| 1897 | 23,347 | 530,149 | 553,496 | 121,320 | 269,126 |
| 1898 | 17,839 | 675,149 | 692,988 | 198,056 | 398,882 |
| 1899 | 64,061 | 547,304 | 611,365 | 158,746 | 305,020 |
| 1900 | 50,900 | 522,230 | 573,130 | 128,098 | 281,372 |
| 1901 | 30,552 | 748,460 | 779,012 | 173,353 | 372,717 |
| 1902 | 52,437 | 670,063 | 722,500 | 164,047 | 388,554 |
| 1903 | 42,540 | 637,822 | 680,362 | 132,608 | 369,582 |
| 1904 | 36,634 | 552,400 | 589,034 | 111,055 | 302,771 |
| 1905 | 24,257 | 692,979 | 717,236 | 158,403 | 404,092 |
| 1906 | 46,053 | 735,261 | 781,314 | 206,642 | 427,253 |
| 1907 | 54,853 | 634,087 | 688,940 | 148,721 | 367,607 |
| 1908 | 33,797 | 664,602 | 698,399 | 143,692 | 398,435 |
| 1909 | 15,062 | 683,335 | 698,397 | 160,214 | 417,464 |
| 1910 | 35,929 | 635,121 | 671,050 | 162,705 | 352,906 |
| 1911 | 34,071 | 621,338 | 655,409 | 122,025 | 348,821 |
| 1912 | 23,876 | 730,267 | 754,143 | 156,483 | 449,966 |
| 1913 | 35,515 | 763,380 | 798,895 | 151,809 | 411,758 |
| 1914 | 32,236 | 891,017 | 923,253 | 152,903 | 541,196 |
| 1915 | 28,972 | 1,011,505 | 1,040,477 | .......... | .......... |

## WHEAT—Continued.

**Table 19.**—*Wheat: Yield per acre, price per bushel Dec. 1, and value per acre, by States.*

| State. | Yield per acre (bushels). | | | | | | | | | | | Farm price per bushel (cents). | | | | | | Value per acre (dollars).[1] | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 10-year average, 1906–1915. | 1906 | 1907 | 1908 | 1909 | 1910 | 1911 | 1912 | 1913 | 1914 | 1915 | 10-year average, 1906–1915. | 1911 | 1912 | 1913 | 1914 | 1915 | 5-year average, 1910–1914. | 1915 |
| Me. | 25.5 | 24.8 | 26.2 | 23.5 | 25.5 | 29.7 | 21.0 | 23.5 | 25.5 | 27.0 | 28.0 | 105 | 110 | 103 | 101 | 109 | 112 | 26.56 | 31.36 |
| Vt. | 25.9 | 22.3 | 23.0 | 23.0 | 25.0 | 29.3 | 27.8 | 25.0 | 24.5 | 29.0 | 30.0 | 101 | 99 | 98 | 100 | 100 | 107 | 27.14 | 32.10 |
| N. Y. | 20.2 | 20.0 | 17.3 | 17.5 | 21.0 | 23.7 | 19.5 | 16.0 | 20.0 | 22.5 | 25.0 | 98 | 95 | 99 | 93 | 108 | 101 | 20.00 | 25.25 |
| N. J. | 18.2 | 18.3 | 18.5 | 17.3 | 17.9 | 18.5 | 17.4 | 18.5 | 17.6 | 18.0 | 20.0 | 99 | 96 | 98 | 96 | 109 | 106 | 17.90 | 21.20 |
| Pa. | 17.5 | 17.7 | 18.6 | 18.5 | 17.0 | 17.8 | 13.5 | 18.0 | 17.0 | 18.1 | 18.5 | 96 | 92 | 95 | 91 | 104 | 104 | 16.04 | 19.24 |
| Del. | 16.7 | 16.0 | 20.5 | 15.0 | 14.0 | 17.0 | 16.7 | 17.5 | 14.5 | 20.5 | 15.0 | 95 | 90 | 96 | 88 | 109 | 109 | 16.45 | 16.35 |
| Md. | 16.5 | 16.0 | 19.0 | 16.4 | 14.5 | 17.4 | 15.5 | 15.0 | 13.3 | 21.5 | 16.1 | 93 | 91 | 95 | 89 | 106 | 105 | 15.80 | 16.90 |
| Va. | 12.6 | 12.5 | 12.5 | 11.4 | 11.2 | 12.8 | 12.0 | 11.6 | 13.6 | 14.5 | 13.8 | 100 | 96 | 101 | 96 | 108 | 108 | 17.88 | 14.90 |
| W. Va. | 13.2 | 12.7 | 12.2 | 13.0 | 13.0 | 12.5 | 11.5 | 14.5 | 13.0 | 15.0 | 15.0 | 102 | 102 | 101 | 100 | 108 | 108 | 13.66 | 16.20 |
| N. C. | 10.4 | 9.1 | 9.5 | 10.0 | 9.5 | 11.4 | 10.6 | 8.9 | 11.7 | 12.0 | 10.9 | 110 | 102 | 111 | 106 | 117 | 120 | 11.93 | 13.08 |
| S. C. | 10.3 | 9.3 | 8.5 | 9.0 | 10.0 | 11.0 | 11.4 | 9.2 | 12.3 | 11.5 | 10.8 | 129 | 123 | 119 | 130 | 145 | 138 | 14.30 | 14.90 |
| Ga. | 10.5 | 10.0 | 9.0 | 9.2 | 10.0 | 10.5 | 12.0 | 9.3 | 12.2 | 12.1 | 11.0 | 123 | 114 | 122 | 120 | 134 | 129 | 13.91 | 14.19 |
| Ohio | 16.6 | 20.4 | 16.3 | 16.0 | 15.9 | 16.2 | 16.0 | 8.0 | 18.0 | 18.5 | 20.3 | 95 | 91 | 98 | 90 | 105 | 104 | 14.52 | 21.11 |
| Ind. | 15.8 | 20.7 | 14.4 | 16.6 | 15.3 | 15.6 | 14.7 | 8.0 | 18.5 | 17.4 | 17.2 | 93 | 89 | 93 | 88 | 103 | 102 | 13.66 | 17.54 |
| Ill. | 16.3 | 19.5 | 18.0 | 13.0 | 17.4 | 15.0 | 16.0 | 8.3 | 18.7 | 18.5 | 19.0 | 91 | 89 | 88 | 86 | 101 | 100 | 13.90 | 19.00 |
| Mich. | 16.7 | 13.1 | 14.5 | 18.0 | 18.8 | 18.0 | 18.0 | 10.0 | 15.3 | 19.7 | 21.3 | 94 | 88 | 96 | 89 | 103 | 101 | 15.07 | 21.51 |
| Wis. | 18.3 | 16.3 | 14.1 | 18.2 | 19.5 | 19.3 | 15.9 | 19.0 | 19.3 | 19.1 | 22.7 | 89 | 90 | 83 | 82 | 100 | 95 | 16.55 | 21.56 |
| Minn. | 13.9 | 10.9 | 13.0 | 12.8 | 16.8 | 16.0 | 10.1 | 15.5 | 16.2 | 10.6 | 17.0 | 87 | 92 | 73 | 76 | 102 | 90 | 11.75 | 15.30 |
| Iowa. | 18.0 | 15.7 | 13.4 | 17.2 | 17.0 | 21.0 | 16.4 | 19.8 | 20.6 | 18.6 | 19.8 | 84 | 88 | 78 | 76 | 96 | 87 | 16.25 | 17.23 |
| Mo. | 14.1 | 14.8 | 13.2 | 10.0 | 14.7 | 13.8 | 15.7 | 12.5 | 17.1 | 17.0 | 12.3 | 89 | 88 | 90 | 84 | 98 | 98 | 13.62 | 12.05 |
| N. Dak. | 11.9 | 13.0 | 10.0 | 11.6 | 13.7 | 5.0 | 8.0 | 18.0 | 10.5 | 11.2 | 18.2 | 84 | 89 | 69 | 73 | 101 | 87 | 8.60 | 15.83 |
| S. Dak. | 11.8 | 13.4 | 11.2 | 12.8 | 14.1 | 12.8 | 4.0 | 14.2 | 9.0 | 9.1 | 17.1 | 83 | 91 | 60 | 71 | 94 | 86 | 7.95 | 14.71 |
| Nebr. | 17.8 | 22.0 | 18.1 | 17.2 | 18.8 | 16.2 | 13.4 | 17.6 | 17.9 | 18.6 | 18.3 | 80 | 87 | 69 | 71 | 95 | 84 | 13.43 | 15.37 |
| Kans. | 13.9 | 15.1 | 11.0 | 12.6 | 14.4 | 14.1 | 10.7 | 15.5 | 13.0 | 20.5 | 12.5 | 84 | 91 | 74 | 79 | 95 | 89 | 12.76 | 11.12 |
| Ky. | 12.6 | 14.1 | 12.0 | 11.6 | 11.8 | 12.8 | 12.7 | 10.0 | 13.6 | 16.5 | 11.0 | 96 | 92 | 99 | 96 | 103 | 105 | 12.71 | 11.55 |
| Tenn. | 11.4 | 12.5 | 9.5 | 10.0 | 10.4 | 11.7 | 11.5 | 10.5 | 12.0 | 15.5 | 10.5 | 99 | 96 | 100 | 98 | 105 | 108 | 12.21 | 11.34 |
| Ala. | 11.4 | 11.0 | 10.0 | 11.5 | 10.5 | 12.0 | 11.5 | 10.6 | 11.7 | 13.0 | 12.0 | 115 | 120 | 113 | 115 | 126 | 125 | 13.84 | 15.00 |
| Miss. | 13.2 | 10.0 | 11.0 | 14.5 | 11.0 | 14.0 | 12.0 | 12.0 | 14.0 | 13.0 | 20.0 | 104 | 100 | 97 | 95 | 125 | 105 | 13.89 | 21.00 |
| Tex. | 12.4 | 11.5 | 7.4 | 11.0 | 9.1 | 15.0 | 9.4 | 15.0 | 17.5 | 13.0 | 15.5 | 98 | 100 | 93 | 94 | 99 | 107 | 13.47 | 16.58 |
| Okla. | 12.5 | 13.7 | 9.0 | 11.6 | 12.8 | 16.3 | 8.0 | 12.8 | 10.0 | 19.0 | 11.6 | 84 | 92 | 75 | 82 | 92 | 89 | 11.36 | 10.32 |
| Ark. | 11.5 | 10.8 | 9.5 | 10.0 | 11.4 | 13.9 | 10.5 | 10.0 | 13.0 | 13.0 | 12.5 | 94 | 90 | 94 | 90 | 99 | 101 | 11.30 | 12.62 |
| Mont. | 25.3 | 24.0 | 28.8 | 24.2 | 30.8 | 22.0 | 28.7 | 24.1 | 23.8 | 20.2 | 26.5 | 78 | 77 | 64 | 60 | 91 | 78 | 18.11 | 20.67 |
| Wyo. | 26.5 | 28.7 | 28.5 | 25.4 | 28.7 | 25.0 | 26.0 | 28.7 | 25.0 | 22.9 | 26.5 | 84 | 94 | 80 | 72 | 89 | 78 | 21.91 | 20.67 |
| Colo. | 24.6 | 32.5 | 29.0 | 21.0 | 29.5 | 22.3 | 18.9 | 24.2 | 21.0 | 23.8 | 23.8 | 81 | 84 | 73 | 78 | 87 | 80 | 17.79 | 19.04 |
| N. Mex. | 22.8 | 25.0 | 24.0 | 25.0 | 24.5 | 20.0 | 22.9 | 20.9 | 18.8 | 24.2 | 22.2 | 95 | 100 | 90 | 97 | 90 | 90 | 20.35 | 19.98 |
| Ariz. | 27.3 | 25.2 | 25.9 | 26.7 | 25.0 | 22.3 | 29.6 | 30.7 | 32.0 | 28.0 | 28.0 | 114 | 95 | 110 | 110 | 125 | 115 | 31.77 | 32.20 |
| Utah. | 25.4 | 27.4 | 28.8 | 26.5 | 25.9 | 22.1 | 22.3 | 25.7 | 24.2 | 25.0 | 25.7 | 79 | 70 | 75 | 73 | 86 | 86 | 18.52 | 22.10 |
| Nev. | 29.3 | 31.5 | 32.0 | 30.0 | 28.7 | 26.5 | 28.3 | 29.2 | 27.7 | 29.6 | 29.6 | 98 | 95 | 100 | 82 | 95 | 95 | 27.16 | 28.12 |
| Idaho. | 26.9 | 24.4 | 25.3 | 28.2 | 27.8 | 22.6 | 30.7 | 28.6 | 27.6 | 26.2 | 28.0 | 72 | 66 | 66 | 63 | 87 | 80 | 19.12 | 22.40 |
| Wash. | 22.4 | 20.8 | 26.0 | 18.8 | 23.2 | 16.9 | 22.7 | 23.5 | 23.2 | 23.5 | 25.2 | 78 | 71 | 68 | 73 | 100 | 82 | 17.14 | 20.66 |
| Oreg. | 21.6 | 20.0 | 23.4 | 20.8 | 20.2 | 22.1 | 21.0 | 25.0 | 21.0 | 20.8 | 22.2 | 81 | 75 | 72 | 75 | 102 | 84 | 17.86 | 18.65 |
| Cal. | 16.1 | 17.1 | 15.0 | 14.6 | 14.0 | 18.0 | 18.0 | 17.0 | 14.0 | 17.0 | 16.0 | 96 | 88 | 93 | 95 | 104 | 95 | 15.91 | 15.20 |
| U. S. | 15.0 | 15.5 | 14.0 | 14.0 | 15.8 | 13.9 | 12.5 | 15.9 | 15.2 | 16.6 | 16.9 | 86.8 | 87.4 | 76.0 | 79.9 | 98.6 | 92.0 | 12.79 | 15.53 |

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[1] Based upon farm price Dec. 1.

## WHEAT—Continued.

TABLE 20.—*Winter and spring wheat: Condition of crop, United States, on first of months named, 1890–1916.*

| Year. | Winter wheat. | | | | | Spring wheat. | | | |
|---|---|---|---|---|---|---|---|---|---|
| | December of previous year. | April. | May. | June. | When harvested. | June. | July. | August. | When harvested. |
| | *P. ct.* | *P. ct.* | *P. ct.* | *P. ct.* | *P. ct.* | *P. ct.* | *P. ct.* | *P. ct.* | *P. ct.* |
| 1890 | 95.3 | 81.0 | 80.0 | 78.1 | 76.2 | 91.3 | 94.4 | 83.2 | 79.7 |
| 1891 | 98.4 | 96.9 | 97.9 | 96.6 | 96.2 | 92.6 | 94.1 | 95.5 | 97.2 |
| 1892 | 85.3 | 81.2 | 84.0 | 88.3 | 89.6 | 92.3 | 90.9 | 87.8 | 81.2 |
| 1893 | 87.4 | 77.4 | 75.4 | 75.5 | 77.7 | 86.4 | 74.1 | 67.0 | 68.9 |
| 1894 | 91.5 | 86.7 | 81.4 | 83.2 | 83.9 | 88.0 | 68.4 | 67.1 | 69.9 |
| 1895 | 89.0 | 81.4 | 82.9 | 71.1 | 65.8 | 97.8 | 102.2 | 95.9 | 94.9 |
| 1896 | 81.4 | 77.1 | 82.7 | 77.9 | 75.6 | 99.9 | 93.3 | 78.9 | 73.8 |
| 1897 | 99.5 | 81.4 | 80.2 | 78.5 | 81.2 | 89.6 | 91.2 | 86.7 | 80.8 |
| 1898 | ........ | 86.7 | 86.5 | 90.8 | 85.7 | 100.9 | 95.0 | 96.5 | 91.7 |
| 1899 | 92.6 | 77.9 | 76.2 | 67.3 | 65.6 | 91.4 | 91.7 | 83.6 | 77.2 |
| 1900 | 97.1 | 82.1 | 88.9 | 82.7 | 80.8 | 87.3 | 55.2 | 56.4 | 56.1 |
| 1901 | 97.1 | 91.7 | 94.1 | 87.8 | 88.3 | 92.0 | 95.6 | 80.3 | 78.4 |
| 1902 | 86.7 | 78.7 | 76.4 | 76.1 | 77.0 | 95.4 | 92.4 | 89.7 | 87.2 |
| 1903 | 99.7 | 97.3 | 92.6 | 82.2 | 78.8 | 95.9 | 82.5 | 77.1 | 78.1 |
| 1904 | 86.6 | 76.5 | 76.5 | 77.7 | 78.7 | 93.4 | 93.7 | 87.5 | 66.2 |
| 1905 | 82.9 | 91.6 | 92.5 | 85.5 | 82.7 | 93.7 | 91.0 | 89.2 | 87.3 |
| 1906 | 94.1 | 89.1 | 90.9 | 82.7 | 85.6 | 93.4 | 91.4 | 86.9 | 83.4 |
| 1907 | 94.1 | 89.9 | 82.9 | 77.4 | 78.3 | 88.7 | 87.2 | 79.4 | 77.1 |
| 1908 | 91.1 | 91.3 | 89.0 | 86.0 | 80.6 | 95.0 | 89.4 | 80.7 | 77.6 |
| 1909 | 85.3 | 82.2 | 83.5 | 80.7 | 82.4 | 95.2 | 92.7 | 91.6 | 88.6 |
| 1910 | 95.8 | 80.8 | 82.1 | 80.0 | 81.5 | 92.8 | 61.6 | 61.0 | 63.1 |
| 1911 | 82.5 | 83.3 | 86.1 | 80.4 | 76.8 | 94.6 | 73.8 | 59.8 | 56.7 |
| 1912 | 86.6 | 80.6 | 79.7 | 74.3 | 73.3 | 95.8 | 89.3 | 90.4 | 90.8 |
| 1913 | 93.2 | 91.6 | 91.9 | 83.5 | 81.6 | 93.5 | 73.8 | 74.1 | 75.3 |
| 1914 | 97.2 | 95.6 | 95.9 | 92.7 | 94.1 | 95.5 | 92.1 | 75.5 | 68.0 |
| 1915 | 88.3 | 88.8 | 92.9 | 85.8 | 84.4 | 94.9 | 93.3 | 93.4 | 94.6 |
| 1916 | 87.7 | ........ | ........ | ........ | ........ | ........ | ........ | ........ | ........ |

TABLE 21.—*Winter wheat: Per cent of area sown which was abandoned (not harvested).*

| Year. | Per cent. | Year. | Per cent. | Year. | Per cent. |
|---|---|---|---|---|---|
| 1901 | 6.7 | 1906 | 5.5 | 1911 | 10.7 |
| 1902 | 15.2 | 1907 | 11.2 | 1912 | 20.1 |
| 1903 | 2.8 | 1908 | 4.2 | 1913 | 4.7 |
| 1904 | 15.4 | 1909 | 7.5 | 1914 | 3.1 |
| 1905 | 4.6 | 1910 | 13.7 | 1915 | 2.7 |

## WHEAT—Continued.

**Table 22.**—*Wheat: Farm price per bushel on first of each month, by geographical divisions, 1914 and 1915.*

| Month. | United States. | | North Atlantic States. | | South Atlantic States. | | N. Central States east of Miss. R. | | N. Central States west of Miss. R. | | South Central States. | | Far Western States. | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1915 | 1914 | 1915 | 1914 | 1915 | 1914 | 1915 | 1914 | 1915 | 1914 | 1915 | 1914 | 1915 | 1914 |
| | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* |
| January | 107.8 | 81.0 | 112.1 | 93.3 | 117.2 | 98.8 | 113.4 | 89.6 | 106.5 | 76.5 | 107.9 | 89.7 | 101.4 | 74.5 |
| February | 129.9 | 81.6 | 135.5 | 92.8 | 139.3 | 99.9 | 135.7 | 90.1 | 129.5 | 77.1 | 129.0 | 90.7 | 120.8 | 74.9 |
| March | 133.6 | 83.1 | 142.8 | 95.4 | 146.0 | 102.6 | 138.6 | 89.9 | 132.4 | 79.8 | 134.9 | 90.0 | 124.8 | 75.0 |
| April | 131.7 | 84.2 | 138.2 | 95.5 | 144.9 | 103.3 | 137.7 | 90.4 | 130.5 | 80.4 | 133.9 | 91.7 | 121.3 | 78.4 |
| May | 139.6 | 83.9 | 145.2 | 96.9 | 148.5 | 103.2 | 142.9 | 89.4 | 142.0 | 80.0 | 138.9 | 91.6 | 122.5 | 78.9 |
| June | 131.5 | 84.4 | 140.2 | 97.3 | 141.5 | 103.0 | 135.9 | 90.6 | 133.1 | 81.4 | 131.9 | 90.7 | 114.5 | 76.6 |
| July | 102.8 | 76.9 | 112.6 | 93.7 | 115.7 | 96.8 | 105.0 | 78.3 | 104.9 | 74.1 | 96.6 | 74.2 | 89.5 | 76.0 |
| August | 106.5 | 76.5 | 107.6 | 85.8 | 110.2 | 90.9 | 101.7 | 78.4 | 112.2 | 75.2 | 104.1 | 74.2 | 90.9 | 78.1 |
| September | 95.0 | 93.3 | 102.8 | 101.5 | 108.8 | 105.1 | 96.7 | 98.7 | 93.8 | 94.1 | 101.5 | 91.0 | 86.1 | 81.1 |
| October | 90.9 | 93.5 | 100.4 | 104.3 | 107.5 | 108.9 | 98.6 | 99.7 | 88.1 | 91.7 | 98.8 | 96.7 | 78.1 | 85.0 |
| November | 93.1 | 97.2 | 101.3 | 104.2 | 111.4 | 111.2 | 102.1 | 102.2 | 89.4 | 95.6 | 100.0 | 98.9 | 83.3 | 91.0 |
| December | 92.0 | 98.6 | 103.3 | 105.2 | 112.9 | 111.0 | 101.5 | 102.8 | 88.0 | 97.0 | 98.9 | 96.6 | 82.2 | 95.4 |
| Average | 105.0 | 88.6 | 112.0 | 99.7 | 118.4 | 102.5 | 109.9 | 91.9 | 104.7 | 86.7 | 106.7 | 85.9 | 89.4 | 84.2 |

Table 23.—*Wheat: Wholesale price per bushel, 1900–1915.*

| Date. | New York. | | Baltimore. | | Chicago. | | Detroit. | | St. Louis. | | Minneapolis. | | San Francisco. | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | No. 2 red winter. | | No. 2 red. | | No. 1 northern spring. | | No. 2 red. | | No. 2 red winter. | | No. 1 northern. | | No. 1 California (per 100 lbs.).[1] | |
| | Low. | High. | Low. | High. | Low. | High. | Low. | High. | Low. | High. | Low. | High. | Low. | High |
| | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Dolls.* | *Dolls* |
| 1900 | 72⅞ | 96⅞ | 70 | 90 | 61⅛ | 87½ | 66⅞ | 91½ | 66⅞ | 86½ | 62 | 90½ | 0.90 | 1.07 |
| 1901 | 72¾ | 89⅞ | 69¼ | 85¾ | 63⅜ | 79½ | 66½ | 90½ | 61¼ | 88½ | 60⅛ | 77¼ | .95 | 1.06¼ |
| 1902 | 73½ | 94¼ | 66¼ | 87¼ | 67½ | 95 | 68½ | 93½ | 63 | 92½ | 66⅛ | 80⅝ | 1.05 | 1.45 |
| 1903 | 78¼ | 99⅞ | 76½ | 88¾ | 70¼ | 93 | 74½ | 94 | 69⅝ | 94 | 73⅛ | 100 | 1.32½ | 1.55 |
| 1904 | 92½ | 126¼ | 82 | 118½ | 81¼ | 122 | 92 | 123 | 89½ | 121 | 84⅞ | 124⅛ | 1.23¾ | 1.50 |
| 1905 | 84⅝ | 125¾ | 73 | 119½ | 82⅛ | 124 | 80 | 124 | 82 | 120 | 75¼ | 124½ | 1.35 | 1.55 |
| 1906 | 77 | 97 | 68 | 91 | 71 | 87½ | 72 | 93½ | 68⅛ | 99¼ | 69⅝ | 85⅞ | ...... | ..... |
| 1907 | 80 | 116½ | 74 | 111½ | 79 | 122 | 75 | 106½ | 74½ | 109½ | 76¾ | 119¾ | 1.22½ | 1.80⅛ |
| 1908 | 95⅜ | 115 | 89 | 106⅞ | 102 | 124 | 89¾ | 107 | 89 | 110 | 98¾ | 125 | 1.55 | 1.77½ |
| 1909 | 106½ | 150⅛ | 99½ | 160 | 103 | 140 | 104¾ | 157 | 102 | 166 | 97¼ | 144½ | 1.65 | 2.15 |
| 1910 | 94½ | 131 | 88¼ | 128 | 100 | 129½ | 91 | 127 | 92 | 135 | 99½ | 129¼ | 1.40 | 2.05 |
| 1911 | 90⅛ | 105½ | 87 | 100¼ | 93 | 117 | 83¼ | 100⅝ | 85 | 108 | 91⅛ | 112⅝ | 1.35 | 1.55 |
| 1912 | 98¼ | 127 | 94½ | 116½ | 85 | 122 | 95¾ | 120 | 92½ | 125½ | 80¼ | 118⅞ | 1.40 | 1.90 |
| 1913 | 94 | 114 | 89¾ | 109½ | 85 | 96 | 87½ | 116¾ | 83 | 115 | 80¾ | 95 | 1.55 | 1.82½ |
| 1914 | 86¼ | 136½ | 82⅝ | 127 | 88½ | 133 | 80 | 127¾ | 75⅞ | 127½ | 84⅝ | 129¼ | 1.51¼ | 2.00 |
| 1915. | | | | | | | | | | | | | | |
| January | 138 | 162 | 132¼ | 151 | 128 | 154 | 128½ | 152 | 127½ | 152 | 125 | 149½ | (²) | (²) |
| February | 157 | 178 | 148½ | 164 | 146 | 167 | 148 | 165 | 145 | 164 | 140¼ | 157¼ | 2.25 | 2.40 |
| March | 149½ | 172¼ | 140¼ | 162⅞ | 138 | 102½ | 136½ | 159½ | 136½ | 157½ | 133⅜ | 156¾ | 2.25 | 2.30 |
| April | 159 | 169⅝ | 155¼ | 168½ | 152½ | 165½ | 152½ | 161 | 149 | 160 | 138¾ | 165⅝ | 2.15 | 2.30 |
| May | 147 | 170 | 141½ | 163½ | 141 | 104⅛ | 139 | 160½ | 137 | 159½ | 146 | 165 | 1.95 | 2.20 |
| June | 126 | 141 | 111 | 140 | 123 | 149 | 114½ | 138 | 110 | 132 | 114⅞ | 144⅞ | 1.65 | 2.00 |
| July | 118¾ | 144½ | 105½ | 114¾ | 132 | 153¾ | 110 | 132 | 108 | 128 | 127⅛ | 151½ | 1.65 | 1.85 |
| August | 110⅛ | 128¾ | 102 | 121½ | 108 | 131 | 106½ | 117½ | 107 | 120⅝ | 96⅝ | 155 | 1.60 | 1.85 |
| September | 108¾ | 128 | 100⅝ | 110⅛ | 99½ | 119½ | 106 | 114 | 106 | 122 | 89 | 104⅞ | 1.40 | 1.65 |
| October | 118 | 130 | 106 | 116 | 99 | 115⅛ | 107 | 115 | 109 | 129 | 92⅞ | 109⅜ | 1.40 | 1.75 |
| November | Nom. | Nom. | 110⅛ | 114¾ | 102½ | 111 | 111 | 114 | 111 | 125 | 98⅝ | 105⅞ | 1.50 | 1.70 |
| December | Nom. | Nom. | 113¼ | 128⅜ | 106 | 128½ | 113½ | 126 | 115 | 129 | 108⅝ | 123⅝ | 1.50 | 1.70 |
| Year | 108¼ | 178 | 100¾ | 168½ | 99 | 167 | 106 | 165 | 106 | 164 | 89 | 165⅝ | 1.40 | 2.40 |

[1] Northern Club, in 1913. White, subsequent to 1913.

[2] Nominal.

## WHEAT—Continued.

TABLE 24.—*Wheat flour: Wholesale price per barrel, 1900–1915.*

| Date. | Chicago. | | | | Cincinnati. | | New York. | | St. Louis. | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Winter patents. | | Spring patents. | | Winter family. | | Spring patents. | | Winter patents. | |
| | Low. | High. | Low. | High. | Low. | High. | Low. | High. | Low. | High. |
| 1900 | $3.40 | $4.40 | $3.00 | $4.30 | $2.35 | $3.50 | $3.25 | $5.00 | $3.35 | $4.25 |
| 1901 | 3.30 | 3.90 | 3.25 | 3.80 | 2.20 | 3.25 | 3.30 | 4.25 | 3.30 | 4.10 |
| 1902 | 3.40 | 4.00 | 3.20 | 3.90 | 2.70 | 3.35 | 3.50 | 4.25 | 3.10 | 4.25 |
| 1903 | 3.40 | 4.20 | 3.30 | 4.60 | 2.65 | 3.55 | 3.55 | 5.00 | 3.35 | 4.40 |
| 1904 | 4.00 | 5.50 | 4.00 | 6.00 | 3.25 | 4.70 | 4.30 | 6.60 | 4.25 | 5.75 |
| 1905 | 3.85 | 5.20 | 3.75 | 5.70 | 3.10 | 4.70 | 4.25 | 6.35 | 4.05 | 5.60 |
| 1906 | 3.20 | 4.10 | 3.55 | 4.15 | 2.70 | 3.60 | 3.75 | 4.80 | 3.35 | 4.60 |
| 1907 | 3.10 | 5.10 | 2.70 | 5.75 | 2.70 | 4.30 | 3.80 | 6.00 | 3.50 | 5.00 |
| 1908 | 4.00 | 5.10 | 4.90 | 5.75 | 3.25 | 4.10 | 4.85 | 5.90 | 4.35 | 5.10 |
| 1909 | 4.65 | 6.75 | 5.35 | 7.00 | 3.95 | 5.85 | 4.80 | 6.85 | 4.60 | 7.00 |
| 1910 | 4.00 | 5.80 | 6.00 | 7.00 | 3.10 | 5.10 | 4.80 | 6.35 | 4.35 | 6.20 |
| 1911 | 3.60 | 5.40 | 5.10 | 6.55 | 2.60 | 3.70 | 4.45 | 5.75 | 3.90 | 5.25 |
| 1912 | 3.75 | 5.45 | 4.00 | 5.60 | 3.40 | 4.50 | 4.25 | 6.00 | 4.20 | 5.85 |
| 1913 | 3.90 | 4.90 | 4.00 | 5.60 | 2.90 | 4.15 | 4.40 | 5.00 | 3.70 | 5.15 |
| 1914 | 3.45 | 5.50 | 4.00 | 6.90 | 3.05 | 4.90 | 4.35 | 7.00 | 3.35 | 5.70 |
| 1915. | | | | | | | | | | |
| January | 6.10 | 7.10 | 6.60 | 7.60 | 4.75 | 6.15 | 6.25 | 7.40 | 5.50 | 6.75 |
| February | 7.00 | 8.00 | 7.20 | 8.00 | 6.25 | 6.65 | 7.25 | 8.25 | 6.60 | 7.50 |
| March | 6.60 | 7.50 | 7.10 | 8.00 | 6.00 | 6.55 | 6.85 | 7.85 | 6.30 | 6.85 |
| April | 7.10 | 8.30 | 6.80 | 7.50 | 6.15 | 6.55 | 7.25 | 8.10 | 6.40 | 6.90 |
| May | ........ | ........ | ........ | ........ | 6.00 | 6.55 | 7.35 | 8.10 | 6.85 | 6.90 |
| June | ........ | ........ | ........ | ........ | 5.25 | 5.90 | 5.50 | 7.90 | 5.10 | 6.30 |
| July | ........ | ........ | ........ | ........ | 5.25 | 5.65 | 5.50 | 7.25 | 4.90 | 5.90 |
| August | ........ | ........ | ........ | ........ | 5.50 | 5.65 | 5.15 | 7.25 | 4.60 | 5.10 |
| September | ........ | ........ | ........ | ........ | 5.00 | 5.65 | 4.90 | 6.85 | 4.60 | 5.00 |
| October | ........ | ........ | ........ | ........ | 4.65 | 5.15 | 5.05 | 6.10 | 4.80 | 5.40 |
| November | ........ | ........ | ........ | ........ | 4.65 | 4.75 | 5.40 | 5.90 | 5.00 | 5.25 |
| December | ........ | ........ | ........ | ........ | 4.65 | 5.25 | 5.60 | 6.70 | 5.10 | 5.60 |
| Year | ........ | ........ | ........ | ........ | 4.65 | 6.65 | 4.90 | 8.25 | 4.60 | 7.50 |

## WHEAT—Continued.

### TABLE 25.—*Wheat and flour: International trade, calendar years 1912–1914.*

["Temporary" imports into Italy of wheat, to be used for manufacturing products for export, are included in the total imports as given in the official Italian returns. In the trade returns of Chile the item *trigo mote* (prepared corn) which might easily be confused with *trigo* (wheat) is omitted. See "General note," *p.* 417.]

EXPORTS.

[000 omitted.]

| Country. | Wheat. | | | Flour. | | | Wheat and flour [1] | | |
|---|---|---|---|---|---|---|---|---|---|
| | 1912 | 1913 | 1914 (prelim.) | 1912 | 1913 | 1914 (prelim.) | 1912 | 1913 | 1914 (prelim.) |
| | *Bushels.* | *Bushels.* | *Bushels.* | *Barrels.* | *Barrels.* | *Barrels.* | *Bushels.* | *Bushels.* | *Bushels.* |
| Argentina | 96,600 | 103,328 | 36,028 | 1,480 | 1,402 | 757 | 103,260 | 109,637 | 39,435 |
| Australia | 32,604 | 42,923 | 52,878 | 1,739 | 2,285 | 1,778 | 40,428 | 53,207 | 60,878 |
| Austria-Hungary | 56 | 71 | ........ | 167 | 369 | ........ | 806 | 1,730 | ........ |
| Belgium | 16,576 | 12,991 | ........ | 732 | 646 | ........ | 19,870 | 15,898 | ........ |
| British India | 65,598 | 50,558 | 26,130 | 714 | 923 | 683 | 68,812 | 54,711 | 29,204 |
| Bulgaria | 9,238 | 9,238 | ........ | 493 | 493 | ........ | 11,456 | 11,456 | ........ |
| Canada | 84,958 | 129,950 | 70,302 | 4,303 | 4,894 | 4,671 | 104,320 | 151,975 | 91,322 |
| Chile | 2,411 | 1,922 | 149 | 74 | 69 | 34 | 2,743 | 2,235 | 301 |
| Germany | 11,853 | 19,781 | ........ | 1,924 | 2,191 | ........ | 20,510 | 29,638 | ........ |
| Netherlands | 51,444 | 63,598 | 37,433 | 157 | 201 | 115 | 52,152 | 64,501 | 37,952 |
| Roumania | 50,406 | 50,406 | ........ | 844 | 814 | ........ | 54,203 | 54,203 | ........ |
| Russia | 96,915 | 122,336 | 88,533 | 1,173 | 1,836 | 947 | 102,195 | 130,596 | 92,795 |
| Serbia [2] | 3,366 | 3,366 | ........ | 80 | 80 | ........ | 3,727 | 3,727 | ........ |
| United States | 61,655 | 99,509 | 173,862 | 10,622 | 12,278 | 12,768 | 109,451 | 154,760 | 231,318 |
| Other countries | 12,839 | 7,499 | ........ | 3,303 | 2,813 | ........ | 27,708 | 20,160 | ........ |
| Total | 596,519 | 717,476 | ........ | 27,805 | 31,324 | ........ | 721,641 | 858,434 | ........ |

IMPORTS.

| Country. | Wheat. | | | Flour. | | | Wheat and flour [1] | | |
|---|---|---|---|---|---|---|---|---|---|
| | 1912 | 1913 | 1914 (prelim.) | 1912 | 1913 | 1914 (prelim.) | 1912 | 1913 | 1914 (prelim.) |
| Belgium | 71,167 | 69,628 | ........ | 21 | 36 | ........ | 71,261 | 69,790 | ........ |
| Brazil | 14,010 | 16,109 | 14,047 | 2,133 | 1,914 | 1,503 | 23,609 | 24,722 | 20,809 |
| British South Africa | 1,886 | 5,359 | 3,782 | 588 | 890 | 706 | 4,531 | 9,366 | 6,957 |
| Denmark | 5,885 | 5,176 | 2,942 | 580 | 670 | 552 | 8,496 | 8,190 | 5,424 |
| France | 26,131 | 57,160 | 60,882 | 126 | 113 | 1,047 | 26,698 | 57,669 | 65,595 |
| Germany | 84,415 | 93,547 | ........ | 179 | 201 | ........ | 85,218 | 94,451 | ........ |
| Greece | 5,901 | 6,882 | ........ | 16 | 15 | ........ | 5,974 | 6,950 | ........ |
| Italy | 65,760 | 66,532 | 37,327 | 34 | 23 | 17 | 65,914 | 66,635 | 37,404 |
| Japan | 2,276 | 6,255 | ........ | 191 | 195 | ........ | 3,135 | 7,131 | ........ |
| Netherlands | 65,788 | 79,369 | 51,366 | 2,051 | 2,259 | 1,598 | 75,018 | 89,534 | 58,556 |
| Portugal | 2,382 | 6,399 | ........ | ........ | ........ | ........ | 2,382 | 6,399 | ........ |
| Spain | 1,543 | 6,405 | 15,528 | 1 | 1 | 10 | 1,547 | 6,409 | 15,575 |
| Sweden | 6,285 | 7,355 | 4,432 | 74 | 97 | 102 | 6,619 | 7,793 | 4,892 |
| Switzerland | 17,843 | 19,446 | 16,200 | 494 | 429 | ........ | 20,066 | 21,376 | ........ |
| United Kingdom | 203,322 | 196,809 | 192,725 | 5,742 | 6,704 | 5,622 | 229,160 | 226,978 | 218,025 |
| Other countries | 11,109 | 13,074 | ........ | 11,497 | 13,060 | ........ | 62,847 | 71,843 | ........ |
| Total | 585,703 | 655,504 | ........ | 23,727 | 26,607 | ........ | 692,475 | 775,236 | ........ |

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[1] Flour is reduced to terms of grain, where included in these 3 columns, by assuming 1 barrel of flour to be the product of 4½ bushels of wheat.

[2] Data for 1911.

## OATS.

### TABLE 26.—*Area and production of undermentioned countries, 1913–1915.*

| Country. | Area. | | | Production. | | |
|---|---|---|---|---|---|---|
| | 1913 | 1914 | 1915 | 1913 | 1914 | 1915 |
| NORTH AMERICA. | *Acres.* | *Acres.* | *Acres.* | *Bushels.* | *Bushels.* | *Bushels.* |
| United States | 38,399,000 | 38,442,000 | 40,780,000 | 1,121,768,000 | 1,141,060,000 | 1,540,362,000 |
| Canada: | | | | | | |
| New Brunswick | 195,000 | 200,000 | 201,000 | 5,946,000 | 6,488,000 | 6,378,000 |
| Quebec | 1,303,000 | 1,327,000 | 1,400,000 | 39,025,000 | 42,119,000 | 43,834,000 |
| Ontario | 2,814,000 | 2,840,000 | 3,095,000 | 105,159,000 | 99,400,000 | 110,996,000 |
| Manitoba | 1,398,000 | 1,331,000 | 1,441,000 | 56,759,000 | 31,951,000 | 65,263,000 |
| Saskatchewan | 2,755,000 | 2,520,000 | 2,937,000 | 114,112,000 | 61,816,000 | 142,121,000 |
| Alberta | 1,639,000 | 1,502,000 | 1,912,000 | 71,542,000 | 57,076,000 | 98,296,000 |
| Other | 330,000 | 341,000 | 379,000 | 12,126,000 | 14,228,000 | 14,147,000 |
| Total Canada | 10,434,000 | 10,061,000 | 11,365,000 | 404,669,000 | 313,078,000 | 481,035,000 |
| Mexico | (1) | (1) | (1) | 17,000 | 17,000 | 17,000 |
| Total | ............ | ............ | ............ | 1,526,454,000 | 1,454,155,000 | 2,021,414,000 |
| SOUTH AMERICA. | | | | | | |
| Argentina | 2,487,000 | 3,087,000 | 2,869,000 | 75,783,000 | 50,981,000 | 63,392,000 |
| Chile | 94,000 | 122,000 | 151,000 | 4,443,000 | 4,437,000 | 7,105,000 |
| Uruguay | 50,000 | 97,000 | 83,000 | 872,000 | 1,850,000 | 1,040,000 |
| Total | 2,631,000 | 3,306,000 | 3,103,000 | 81,098,000 | 57,268,000 | 71,537,000 |
| EUROPE. | | | | | | |
| Austria-Hungary: | | | | | | |
| Austria | 4,707,000 | (1) | (1) | 160,068,000 | 150,000,000 | 145,000,000 |
| Hungary proper | 2,884,000 | 2,603,000 | 2,664,000 | 99,807,000 | 86,537,000 | 80,925,000 |
| Croatia-Slavonia | 256,000 | (1) | (1) | 6,163,000 | 4,000,000 | 5,000,000 |
| Bosnia-Herzegovina | 299,000 | (1) | (1) | 4,796,000 | 3,000,000 | 4,000,000 |
| Total Austria-Hungary | 8,146,000 | ............ | ............ | 270,834,000 | 243,537,000 | 234,925,000 |
| Belgium | 671,000 | 686,000 | (1) | 47,957,000 | 49,742,000 | 40,000,000 |
| Bulgaria | 417,000 | 400,000 | (1) | 10,125,000 | 8,623,000 | 9,545,000 |
| Denmark | [2] 1,059,000 | (1) | 1,024,000 | 46,755,000 | 38,653,000 | 42,874,000 |
| Finland | (1) | (1) | (1) | 22,924,000 | 18,678,000 | 22,000,000 |
| France | 9,833,000 | 8,873,000 | 9,051,000 | 311,157,000 | 261,196,000 | 243,531,000 |
| Germany | 10,967,000 | 10,843,000 | (1) | 669,231,000 | 622,674,000 | 650,000,000 |
| Italy | 1,251,000 | 1,213,000 | 1,208,000 | 43,469,000 | 26,827,000 | 31,443,000 |
| Netherlands | 348,000 | 346,000 | 351,000 | 21,117,000 | 19,957,000 | 19,644,000 |
| Norway | [2] 270,000 | (1) | (1) | 11,734,000 | 9,325,000 | 9,325,000 |
| Roumania | 1,290,000 | 1,056,000 | 1,065,000 | 35,138,000 | 25,015,000 | 29,054,000 |
| Russia: | | | | | | |
| Russia proper | 38,049,000 | ............ | ............ | 990,957,000 | ............ | ............ |
| Poland | 2,891,000 | ............ | ............ | 84,412,000 | ............ | ............ |
| Northern Caucasia | 1,103,000 | ............ | ............ | 30,222,000 | ............ | ............ |
| Total Russia, European | 42,043,000 | [3] 46,924,000 | [3] 44,787,000 | 1,105,591,000 | [4] 866,143,000 | [4] 1,006,983,000 |
| Serbia | 272,000 | (1) | ............ | 5,512,000 | 5,000,000 | 4,000,000 |
| Spain | 1,351,000 | 1,304,000 | 1,403,000 | 25,333,000 | 31,227,000 | 36,949,000 |
| Sweden | 1,974,000 | 1,960,000 | (1) | 99,815,000 | 52,557,000 | 70,000,000 |
| United Kingdom: | | | | | | |
| England | 1,772,000 | 1,730,000 | 1,889,000 | 70,404,000 | 71,408,000 | 78,938,000 |
| Wales | 202,000 | 200,000 | 199,000 | 6,992,000 | 7,431,000 | 7,314,000 |
| Scotland | 938,000 | 920,000 | 972,000 | 37,148,000 | 38,115,000 | 40,313,000 |
| Ireland | 1,049,000 | 1,029,000 | 1,089,000 | 66,103,000 | 63,287,000 | 68,604,000 |
| Total United Kingdom | 3,961,000 | 3,879,000 | 4,149,000 | 180,647,000 | 180,241,000 | 195,169,000 |
| Total | ............ | ............ | ............ | 2,907,339,000 | 2,459,395,000 | 2,645,442,000 |

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[1] No official statistics.

[2] Census of 1910.

[3] 63 governments of European and 10 of Asiatic Russia.

[4] 51 governments of European and 10 of Asiatic Russia.

## OATS—Continued.

**Table 26.**—*Area and production of undermentioned countries, 1913–1915*—Continued.

| Country. | Area. | | | Production. | | |
|---|---|---|---|---|---|---|
| | 1913 | 1914 | 1915 | 1913 | 1914 | 1915 |
| ASIA. | *Acres.* | *Acres.* | *Acres.* | *Bushels.* | *Bushels.* | *Bushels.* |
| **Cyprus** | (1) | (1) | (1) | 400,000 | 400,000 | 400,000 |
| **Russia:** | | | | | | |
| Central Asia (4 governments) | 997,000 | ... | ... | 16,985,000 | ... | ... |
| Siberia (4 governments) | 4,666,000 | ... | ... | 102,681,000 | ... | ... |
| Transcaucasia (1 government) | 3,000 | ... | ... | 75,000 | ... | ... |
| Total Russia, Asiatic | 5,666,000 | (2) | (2) | 119,741,000 | (2) | (2) |
| Total | ... | ... | ... | 120,141,000 | 400,000 | 400,000 |
| AFRICA. | | | | | | |
| **Algeria** | 539,000 | 573,000 | 590,000 | 17,973,000 | 10,000,000 | 15,082,000 |
| **Tunis** | 133,000 | 99,000 | 148,000 | 4,133,000 | 689,000 | 3,445,000 |
| **Union of South Africa** | (1) | (1) | (1) | [3] 9,661,000 | [3] 9,661,000 | [3] 9,661,000 |
| Total | ... | ... | ... | 31,767,000 | 20,350,000 | 28,188,000 |
| AUSTRALASIA. | | | | | | |
| **Australia:** | | | | | | |
| Queensland | 4,000 | (1) | (1) | 85,000 | 58,000 | (1) |
| New South Wales | 85,000 | (1) | (1) | 1,725,000 | 1,893,000 | (1) |
| Victoria | 439,000 | 442,000 | (1) | 8,586,000 | 9,170,000 | (1) |
| South Australia | 156,000 | 117,000 | 141,000 | 1,726,000 | 1,239,000 | 380,000 |
| Western Australia | 128,000 | 140,000 | 74,000 | 2,175,000 | 1,708,000 | 629,000 |
| Tasmania | 62,000 | (1) | (1) | 2,328,000 | 1,644,000 | (1) |
| Total Australia | 874,000 | 859,000 | ... | 16,625,000 | 15,712,000 | 5,000,000 |
| **New Zealand** | 387,000 | 362,000 | 288,000 | 14,013,000 | 15,206,000 | 11,797,000 |
| Total Australasia | 1,261,000 | 1,221,000 | ... | 30,638,000 | 30,918,000 | 16,797,000 |
| Grand total | ... | ... | ... | 4,697,437,000 | 4,022,486,000 | 4,783,778,000 |

[1] No official statistics. [2] Included in "Total Russia, European." [3] Census of 1911.

**Table 27.**—*Oats: Total production in countries named in Table 26, 1895–1915.*

| Year. | Production. | Year. | Production. | Year. | Production. | Year. | Production. |
|---|---|---|---|---|---|---|---|
| | *Bushels.* | | *Bushels.* | | *Bushels.* | | *Bushels.* |
| 1895 | 3,008,154,000 | 1901 | 2,862,615,000 | 1906 | 3,544,961,000 | 1911 | 3,808,561,0 |
| 1896 | 2,847,115,000 | 1902 | 3,626,303,000 | 1907 | 3,603,896,000 | 1912 | 4,617,394,0 |
| 1897 | 2,633,971,000 | 1903 | 3,378,034,000 | 1908 | 3,591,012,000 | 1913 | 4,697,437,0 |
| 1898 | 2,903,974,000 | 1904 | 3,611,302,000 | 1909 | 4,312,882,000 | 1914 | 4,022,486,0 |
| 1899 | 3,256,256,000 | 1905 | 3,510,167,000 | 1910 | 4,182,410,000 | 1915 | 4,783,778,0 |
| 1900 | 3,166,002,000 | | | | | | |

**Table 28.**—*Oats: Average yield per acre of undermentioned countries, 1890–1914.*

| Year. | United States. | Russia (European).[1] | Germany.[1] | Austria.[1] | Hungary proper.[1] | France.[2] | United Kingdom.[2] |
|---|---|---|---|---|---|---|---|
| Average: | *Bushels.* | *Bushels.* | *Bushels.* | *Bushels.* | *Bushels.* | *Bushels.* | *Bushels.* |
| 1890–1899 | 26.1 | 17.8 | 40.0 | 25.3 | ... | 29.8 | 43.6 |
| 1900–1909 | 29.3 | 20.0 | 50.7 | 29.8 | 30.7 | 31.6 | 44.3 |
| 1905 | 34.0 | 20.2 | 43.6 | 27.7 | 31.0 | 28.6 | 41.7 |
| 1906 | 31.2 | 15.1 | 55.7 | 34.1 | 34.2 | 27.0 | 43.8 |
| 1907 | 23.7 | 19.7 | 58.3 | 35.7 | 30.0 | 31.8 | 45.1 |
| 1908 | 25.0 | 20.1 | 50.2 | 32.0 | 26.8 | 29.6 | 43.5 |
| 1909 | 28.6 | 25.7 | 59.0 | 37.4 | 33.8 | 34.1 | 45.9 |
| 1910 | 31.6 | 22.5 | 51.3 | 31.5 | 26.8 | 29.8 | 44.3 |
| 1911 | 24.4 | 18.6 | 49.6 | 33.7 | 33.8 | 30.8 | 41.5 |
| 1912 | 37.4 | 23.6 | 54.1 | 36.2 | 31.1 | 31.9 | 41.7 |
| 1913 | 29.2 | 26.3 | 61.1 | 39.3 | 34.6 | 31.6 | 43.0 |
| 1914 | 29.7 | ... | 57.4 | ... | 33.2 | 35.8 | 44.0 |
| **Average (1905–1914)** | 29.5 | ... | 54.0 | ... | 31.5 | 31.1 | 43.5 |

[1] Bushels of 32 pounds. [2] Winchester bushels.

## OATS—Continued.

TABLE 29.—*Oats: Acreage, production, value, exports, etc., in the United States, 1849–1915.*

NOTE.—Figures in *italics* are census returns; figures in roman are estimates of the Department of Agriculture. Estimates of acres are obtained by applying estimated percentages of increase or decrease to the published numbers of the preceding year, except that a revised base is used for applying percentage estimates whenever new census data are available.

| Year. | Acreage. | Average yield per acre. | Production. | Average farm price per bushel Dec. 1. | Farm value, Dec. 1. | Chicago cash price for bushel, contract.[1] December. Low. | December. High. | Following May. Low. | Following May. High. | Domestic exports, including oatmeal, fiscal year beginning July 1.[2] | Imports during fiscal year beginning July 1.[3] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | *Acres.* | *Bush.* | *Bushels.* | *Cts.* | *Dollars.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Bushels.* | *Bushels.* |
| *1849*.... | ........... | ...... | *146,584,000* | ...... | ........... | ...... | ...... | ...... | ...... | ........... | ........ |
| *1859*.... | ........... | ...... | *172,643,000* | ...... | ........... | ...... | ...... | ...... | ...... | ........... | ........ |
| 1866.... | 8,864,000 | 30.2 | 268,141,000 | 35.1 | 94,058,000 | 36 | 43 | 59 | 78 | 825,895 | 778,198 |
| 1867.... | 10,082,000 | 27.6 | 278,698,000 | 44.5 | 123,903,000 | 52 | 57¼ | ...... | ...... | 122,554 | 780,798 |
| 1868.... | 9,666,000 | 26.4 | 254,961,000 | 41.7 | 106,356,000 | 43 | 49½ | 56¼ | 62½ | 481,871 | 326,659 |
| 1869.... | 9,461,000 | 30.5 | 288,334,000 | 38.0 | 109,522,000 | 40 | 44¼ | 46½ | 53½ | 121,517 | 2,266,785 |
| *1869*.... | ........... | ...... | *282,107,000* | ...... | ........... | ...... | ...... | ...... | ...... | ........... | ........ |
| 1870.... | 8,792,000 | 28.1 | 247,277,000 | 39.0 | 96,444,000 | 37¼ | 41 | 47¼ | 51 | 147,572 | 599,514 |
| 1871.... | 8,366,000 | 30.6 | 255,743,000 | 36.2 | 92,591,000 | 30¾ | 33 | 34¾ | 42½ | 262,975 | 535,250 |
| 1872.... | 9,001,000 | 30.2 | 271,747,000 | 29.9 | 81,304,000 | 23½ | 25⅝ | 30 | 34 | 714,072 | 225,555 |
| 1873.... | 9,752,000 | 27.7 | 270,340,000 | 34.6 | 93,474,000 | 34 | 40⅝ | 44 | 48½ | 812,873 | 191,802 |
| 1874.... | 10,897,000 | 22.1 | 240,369,000 | 47.1 | 113,134,000 | 51¾ | 54½ | 57½ | 64½ | 504,770 | 1,500,040 |
| 1875.... | 11,915,000 | 29.7 | 354,318,000 | 32.0 | 113,441,000 | 29½ | 30½ | 28⅝ | 31½ | 1,466,228 | 121,547 |
| 1876.... | 13,359,000 | 24.0 | 320,884,000 | 32.4 | 103,845,000 | 31¼ | 34½ | 37¼ | 45¾ | 2,854,128 | 41,597 |
| 1877.... | 12,826,000 | 31.7 | 406,394,000 | 28.4 | 115,546,000 | 24⅝ | 27 | 23 | 27 | 3,715,479 | 21,391 |
| 1878.... | 13,176,000 | 31.4 | 413,579,000 | 24.6 | 101,752,000 | 19⅝ | 20⅝ | 24⅝ | 30½ | 5,452,136 | 13,395 |
| 1879.... | 12,684,000 | 28.7 | 363,761,000 | 33.1 | 120,533,000 | 32¾ | 36¼ | 29½ | 34¼ | 766,366 | 489,576 |
| *1879*.... | *16,145,000* | *25.3* | *407,859,000* | ...... | ........... | ...... | ...... | ...... | ...... | ........... | ........ |
| 1880.... | 16,188,000 | 25.8 | 417,885,000 | 36.0 | 150,244,000 | 29¼ | 33½ | 36¼ | 39½ | 402,904 | 64,412 |
| 1881.... | 16,832,000 | 24.7 | 416,481,000 | 46.4 | 193,199,000 | 43½ | 46¼ | 48⅝ | 56⅝ | 625,690 | 1,850,983 |
| 1882.... | 18,495,000 | 26.4 | 488,251,000 | 37.5 | 182,978,000 | 34⅝ | 41½ | 38⅝ | 42¾ | 461,496 | 815,017 |
| 1883.... | 20,325,000 | 28.1 | 571,302,000 | 32.7 | 187,040,000 | 29⅝ | 36⅛ | 30⅜ | 34½ | 3,274,622 | 121,069 |
| 1884.... | 21,301,000 | 27.4 | 583,628,000 | 27.7 | 161,528,000 | 22½ | 25¼ | 34½ | 37 | 6,203,104 | 94,310 |
| 1885.... | 22,784,000 | 27.6 | 629,409,000 | 28.5 | 179,632,000 | 27 | 29 | 26¼ | 29⅝ | 7,311,306 | 149,480 |
| 1886.... | 23,658,000 | 26.4 | 624,134,000 | 29.8 | 186,138,000 | 25⅝ | 27½ | 25¾ | 27½ | 1,374,635 | 139,575 |
| 1887.... | 25,921,000 | 25.4 | 659,618,000 | 30.4 | 200,700,000 | 28⅝ | 30⅞ | 32¼ | 38 | 573,080 | 123,817 |
| 1888.... | 26,998,000 | 26.0 | 701,735,000 | 27.8 | 195,424,000 | 25 | 26⅞ | 21⅝ | 23⅝ | 1,191,471 | 131,501 |
| 1889.... | 27,462,000 | 27.4 | 751,515,000 | 22.9 | 171,781,000 | 20 | 21 | 24¾ | 30 | 15,107,238 | 153,232 |
| *1889*.... | *28,321,000* | *28.6* | *809,251,000* | ...... | ........... | ...... | ...... | ...... | ...... | ........... | ........ |
| 1890.... | 26,431,000 | 19.8 | 523,621,000 | 42.4 | 222,048,000 | 39⅞ | 43⅞ | 45¼ | 54 | 1,382,836 | 41,848 |
| 1891.... | 25,582,000 | 28.9 | 738,394,000 | 31.5 | 232,312,000 | 31⅞ | 33⅝ | 28¾ | 33½ | 10,586,644 | 47,782 |
| 1892.... | 27,064,000 | 24.4 | 661,035,000 | 31.7 | 209,254,000 | 25⅝ | 31¼ | 28⅝ | 32¼ | 2,700,793 | 49,433 |
| 1893.... | 27,273,000 | 23.4 | 638,855,000 | 29.4 | 187,576,000 | 27½ | 29⅝ | 32¼ | 36 | 6,290,229 | 31,759 |
| 1894.... | 27,024,000 | 24.5 | 662,037,000 | 32.4 | 214,817,000 | 28¾ | 29⅝ | 27½ | 30¾ | 1,708,824 | 330,318 |
| 1895.... | 27,878,000 | 29.6 | 824,444,000 | 19.9 | 163,655,000 | 16⅝ | 17¼ | 18 | 19⅝ | 15,156,618 | 66,602 |
| 1896.... | 27,566,000 | 25.7 | 707,346,000 | 18.7 | 132,485,000 | 16½ | 18¾ | 16⅞ | 18¾ | 37,725,083 | 131,204 |
| 1897.... | 25,730,000 | 27.2 | 698,768,000 | 21.2 | 147,975,000 | 21 | 23¾ | 26 | 32 | 73,880,307 | 25,093 |
| 1898.... | 25,777,000 | 28.4 | 730,907,000 | 25.5 | 186,405,000 | 26 | 27¾ | 24 | 27⅝ | 33,534,362 | 28,098 |
| 1899.... | 26,341,000 | 30.2 | 796,178,000 | 24.9 | 198,168,000 | 22¼ | 23 | 21¼ | 23¾ | 45,048,857 | 54,576 |
| *1899*.... | *29,540,000* | *31.9* | *943,389,000* | ...... | ........... | ...... | ...... | ...... | ...... | ........... | ........ |
| 1900.... | 27,365,000 | 29.6 | 809,126,000 | 25.8 | 208,669,000 | 21¾ | 22⅝ | 27⅞ | 31 | 42,268,931 | 32,107 |
| 1901.... | 28,541,000 | 25.8 | 736,809,000 | 39.9 | 293,659,000 | 42 | 48¼ | 41 | 49½ | 13,277,612 | 38,978 |
| 1902.... | 28,653,000 | 34.5 | 987,843,000 | 30.7 | 303,585,000 | 29¼ | 32 | 33⅝ | 38¼ | 8,381,805 | 150,065 |
| 1903.... | 27,638,000 | 28.4 | 784,094,000 | 34.1 | 267,662,000 | 34¾ | 38 | 39⅝ | 44¾ | 1,960,740 | 183,983 |
| 1904.... | 27,843,000 | 32.1 | 894,596,000 | 31.3 | 279,900,000 | 28¼ | 32 | 28⅝ | 32 | 8,394,692 | 55,699 |
| 1905.... | 28,047,000 | 34.0 | 953,216,000 | 29.1 | 277,048,000 | 29½ | 32¾ | 32¼ | 34¾ | 48,434,541 | 40,025 |
| 1906.... | 30,959,000 | 31.2 | 964,905,000 | 31.7 | 306,293,000 | 33 | 35⅝ | 44¾ | 48½ | 6,386,334 | 91,289 |
| 1907.... | 31,837,000 | 23.7 | 754,443,000 | 44.3 | 334,568,000 | 46½ | 50¾ | 52¼ | 56¼ | 2,518,855 | 383,418 |
| 1908.... | 32,344,000 | 25.0 | 807,156,000 | 47.2 | 381,171,000 | 48⅝ | 50½ | 56¼ | 62½ | 2,333,817 | 6,691,700 |
| 1909.... | 33,204,000 | 30.3 | 1,007,353,000 | ...... | ........... | ...... | ...... | ...... | ...... | ........... | ........ |
| *1909*.... | *35,159,000* | *28.6* | *1,007,129,000* | 40.2 | 405,120,000 | 40 | 45 | 36½ | 48¼ | 2,548,726 | 1,034,511 |
| 1910[4]... | 37,548,000 | 31.6 | 1,186,341,000 | 34.4 | 408,388,000 | 31 | 32¼ | 31⅞ | 36 | 3,845,850 | 107,318 |
| 1911.... | 37,763,000 | 24.4 | 922,298,000 | 45.0 | 414,663,000 | 46¼ | 47⅝ | 50¾ | 58 | 2,677,749 | 2,622,357 |
| 1912.... | 37,917,000 | 37.4 | 1,418,337,000 | 31.9 | 452,469,000 | 31 | 31⅝ | 35¼ | 43 | 36,455,474 | 723,899 |
| 1913.... | 38,399,000 | 29.2 | 1,121,768,000 | 39.2 | 439,596,000 | 37⅝ | 40¾ | 37 | 42½ | 2,748,743 | 22,273,624 |
| 1914.... | 38,442,000 | 29.7 | 1,141,060,000 | 43.8 | 499,431,000 | 46⅝ | 49¼ | 50½ | 56 | 100,949,272 | 630,722 |
| 1915.... | 40,780,000 | 37.8 | 1,540,362,000 | 36.1 | 555,569,000 | 40⅝ | 44 | ...... | ...... | ........... | ........ |

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[1] Quotations are for No. 2 to 1906.

[2] Oatmeal not included 1866 to 1882, inclusive.

[3] Oatmeal not included 1867 to 1882 inclusive, and 1909.

[4] Figures adjusted to census basis.

## OATS—Continued.

**Table 30.**—*Oats: Acreage, production, and total farm value, by States, 1914 and 1915.*

| State. | Thousands of acres. | | Production (thousands of bushels). | | Total value, basis Dec. 1 price (thousands of dollars). | |
|---|---|---|---|---|---|---|
| | 1915 | 1914 | 1915 | 1914 | 1915 | 1914 |
| Maine | 152 | 141 | 6,080 | 5,781 | 2,736 | 3,295 |
| New Hampshire | 12 | 12 | 456 | 456 | 246 | 264 |
| Vermont | 81 | 79 | 3,483 | 3,358 | 1,846 | 1,847 |
| Massachusetts | 9 | 9 | 324 | 333 | 165 | 186 |
| Rhode Island | 2 | 2 | 66 | 55 | 33 | 32 |
| Connecticut | 13 | 11 | 422 | 319 | 232 | 175 |
| New York | 1,340 | 1,275 | 54,270 | 40,162 | 24,422 | 20,483 |
| New Jersey | 70 | 67 | 2,275 | 1,943 | 1,092 | 1,049 |
| Pennsylvania | 1,140 | 1,073 | 43,320 | 32,190 | 19,061 | 16,417 |
| Delaware | 4 | 4 | 134 | 108 | 68 | 54 |
| Maryland | 45 | 43 | 1,530 | 1,161 | 750 | 604 |
| Virginia | 225 | 191 | 5,625 | 2,960 | 3,094 | 1,717 |
| West Virginia | 120 | 105 | 3,480 | 2,100 | 1,775 | 1,155 |
| North Carolina | 350 | 250 | 8,050 | 4,375 | 4,991 | 2,844 |
| South Carolina | 525 | 375 | 9,975 | 7,500 | 6,683 | 5,325 |
| Georgia | 905 | 450 | 17,648 | 9,000 | 11,648 | 6,300 |
| Florida | 61 | 50 | 1,220 | 900 | 854 | 630 |
| Ohio | 1,683 | 1,650 | 69,003 | 50,325 | 24,841 | 22,646 |
| Indiana | 1,638 | 1,575 | 65,520 | 44,888 | 22,277 | 19,302 |
| Illinois | 4,343 | 4,300 | 195,435 | 125,990 | 68,402 | 55,436 |
| Michigan | 1,530 | 1,515 | 61,260 | 50,752 | 22,491 | 22,838 |
| Wisconsin | 2,150 | 2,300 | 99,975 | 62,100 | 35,991 | 26,703 |
| Minnesota | 3,125 | 3,040 | 134,375 | 85,120 | 43,000 | 34,048 |
| Iowa | 4,950 | 5,000 | 198,000 | 165,000 | 63,360 | 67,650 |
| Missouri | 1,225 | 1,200 | 31,850 | 25,800 | 12,103 | 11,352 |
| North Dakota | 2,450 | 2,318 | 98,000 | 64,904 | 26,460 | 24,014 |
| South Dakota | 1,725 | 1,606 | 72,450 | 44,165 | 20,286 | 16,783 |
| Nebraska | 2,200 | 2,175 | 70,400 | 69,600 | 21,824 | 27,840 |
| Kansas | 1,650 | 1,760 | 43,725 | 58,960 | 16,178 | 24,763 |
| Kentucky | 210 | 175 | 5,460 | 3,675 | 2,621 | 1,948 |
| Tennessee | 357 | 350 | 8,746 | 8,050 | 4,373 | 4,266 |
| Alabama | 600 | 390 | 11,400 | 8,580 | 7,182 | 5,920 |
| Mississippi | 250 | 160 | 5,375 | 3,680 | 3,225 | 2,392 |
| Louisiana | 120 | 70 | 3,000 | 1,610 | 1,650 | 1,014 |
| Texas | 1,250 | 900 | 44,375 | 22,500 | 18,638 | 10,800 |
| Oklahoma | 1,400 | 1,100 | 37,800 | 30,250 | 13,230 | 12,402 |
| Arkansas | 375 | 260 | 10,125 | 6,240 | 5,265 | 3,307 |
| Montana | 600 | 530 | 31,200 | 18,550 | 9,984 | 7,234 |
| Wyoming | 227 | 225 | 9,534 | 7,875 | 4,100 | 3,780 |
| Colorado | 300 | 325 | 11,700 | 13,000 | 4,797 | 5,850 |
| New Mexico | 60 | 52 | 2,160 | 1,976 | 1,080 | 889 |
| Arizona | 9 | 8 | 333 | 336 | 213 | 235 |
| Utah | 100 | 95 | 4,700 | 4,750 | 2,115 | 2,042 |
| Nevada | 13 | 13 | 585 | 676 | 322 | 372 |
| Idaho | 335 | 332 | 15,745 | 14,608 | 5,353 | 5,551 |
| Washington | 275 | 297 | 13,750 | 13,959 | 5,088 | 5,863 |
| Oregon | 365 | 364 | 16,060 | 12,740 | 5,942 | 5,733 |
| California | 211 | 220 | 6,963 | 7,700 | 3,482 | 4,081 |
| United States | 40,780 | 38,442 | 1,540,362 | 1,141,060 | 555,569 | 499,431 |

## OATS—Continued.

TABLE 31.—*Oats: Production and distribution in the United States, 1897–1915.*

[000 omitted.]

| Year. | Old stock on farms Aug. 1. | Crop. | Total supplies. | Stock on farms Mar. 1 following. | Shipped out of county where grown. |
|---|---|---|---|---|---|
| | *Bushels.* | *Bushels.* | *Bushels.* | *Bushels.* | *Bushels.* |
| 1897 | 71,139 | 698,768 | 769,907 | 271,729 | 204,147 |
| 1898 | 44,554 | 730,907 | 775,461 | 283,209 | 193,527 |
| 1899 | 50,537 | 796,178 | 846,715 | 290,937 | 223,014 |
| 1900 | 54,214 | 809,126 | 863,340 | 292,803 | 242,850 |
| 1901 | 47,713 | 736,809 | 784,522 | 226,393 | 143,398 |
| 1902 | 30,570 | 987,843 | 1,018,413 | 364,926 | 258,438 |
| 1903 | 73,352 | 784,094 | 857,446 | 273,708 | 223,959 |
| 1904 | 42,194 | 894,596 | 936,790 | 347,166 | 261,989 |
| 1905 | 55,836 | 953,216 | 1,009,052 | 379,805 | 277,133 |
| 1906 | 67,688 | 964,905 | 1,032,593 | 384,461 | 266,182 |
| 1907 | 68,258 | 754,443 | 822,701 | 267,476 | 210,923 |
| 1908 | 37,797 | 807,156 | 844,953 | 278,847 | 244,444 |
| 1909 | 26,323 | 1,007,130 | 1,033,453 | 365,432 | 329,252 |
| 1910 | 64,199 | 1,186,341 | 1,250,540 | 442,665 | 363,103 |
| 1911 | 67,793 | 922,298 | 990,091 | 289,988 | 265,958 |
| 1912 | 34,872 | 1,418,337 | 1,453,209 | 604,216 | 438,084 |
| 1913 | 103,900 | 1,121,768 | 1,225,668 | 419,476 | 297,326 |
| 1914 | 62,467 | 1,141,060 | 1,203,527 | 379,369 | 335,539 |
| 1915 | 55,607 | 1,540,362 | 1,595,969 | ........... | ........... |

TABLE 32.—*Oats: Yield per acre, price per bushel Dec. 1, and value per acre, by States.*

| State. | Yield per acre (bushels). | | | | | | | | | | | Farm price per bushel (cents). | | | | | | Value per acre (dollars).[1] | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 10-year average, 1906–1915. | 1906 | 1907 | 1908 | 1909 | 1910 | 1911 | 1912 | 1913 | 1914 | 1915 | 10-year average, 1906–1915. | 1911 | 1912 | 1913 | 1914 | 1915 | 5-year average, 1910–1914. | 1915 |
| Me | 38.0 | 35.8 | 37.1 | 34.0 | 37.0 | 42.4 | 38.5 | 34.6 | 40.0 | 41.0 | 40.0 | 53 | 54 | 51 | 55 | 57 | 45 | 20.83 | 18.00 |
| N. H | 35.6 | 34.5 | 32.5 | 30.6 | 31.5 | 42.8 | 33.8 | 39.0 | 35.0 | 38.0 | 38.0 | 56 | 61 | 48 | 56 | 58 | 54 | 20.56 | 20.52 |
| Vt | 38.1 | 37.2 | 34.0 | 33.3 | 32.2 | 41.5 | 35.0 | 43.0 | 39.0 | 42.5 | 43.0 | 54 | 59 | 48 | 52 | 55 | 53 | 21 14 | 22.79 |
| Mass | 34.6 | 34.0 | 35.0 | 33.0 | 31.0 | 35.5 | 35.0 | 34.0 | 35.0 | 37.0 | 36.0 | 54 | 58 | 47 | 54 | 56 | 51 | 18.73 | 18.36 |
| R. I | 29.4 | 29.3 | 29.5 | 31.0 | 25.0 | 35.0 | 29.0 | 28.6 | 26.0 | 27.5 | 33.0 | 54 | 58 | 45 | 50 | 58 | 50 | 15.09 | 16.50 |
| Conn | 31.8 | 34.2 | 31.5 | 32.6 | 27.5 | 36.8 | 35.1 | 30.7 | 28.0 | 29.0 | 32.5 | 53 | 56 | 49 | 55 | 55 | 55 | 16.45 | 17.88 |
| N. Y | 32.2 | 32.3 | 30.7 | 30.1 | 28.2 | 34.5 | 29.5 | 30.8 | 33.5 | 31.5 | 40.5 | 48 | 51 | 42 | 47 | 51 | 45 | 14.85 | 18.22 |
| N. J | 29.6 | 26.6 | 29.5 | 30.7 | 25.5 | 37.1 | 28.5 | 27.6 | 29.0 | 29.0 | 32.5 | 49 | 50 | 44 | 47 | 54 | 48 | 14.40 | 15.60 |
| Pa | 30.6 | 27.4 | 29.6 | 27.3 | 26.0 | 35.2 | 28.3 | 33.1 | 31.0 | 30.0 | 38.0 | 47 | 50 | 41 | 46 | 51 | 44 | 14.34 | 16.72 |
| Del | 29.5 | 24.5 | 30.0 | 29.8 | 25.5 | 33.8 | 30.0 | 30.5 | 30.5 | 27.0 | 33.5 | 48 | 47 | 45 | 51 | 50 | 51 | 14.28 | 17.08 |
| Md | 28.0 | 25.4 | 27.5 | 25.5 | 25.4 | 30.0 | 27.0 | 30.0 | 28.0 | 27.0 | 34.0 | 48 | 49 | 45 | 48 | 52 | 49 | 13.60 | 16.66 |
| Va | 20.2 | 18.0 | 19.6 | 19.1 | 19.0 | 22.0 | 20.0 | 22.2 | 21.5 | 15.5 | 25.0 | 52 | 54 | 52 | 52 | 58 | 55 | 10.66 | 13.75 |
| W. Va | 22.9 | 20.6 | 19.3 | 19.0 | 22.0 | 25.2 | 22.0 | 28.0 | 24.0 | 20.0 | 29.0 | 51 | 56 | 47 | 51 | 55 | 51 | 12.26 | 14.79 |
| N. C | 17.8 | 16.2 | 15.6 | 16.5 | 16.5 | 18.2 | 16.5 | 18.6 | 19.5 | 17.5 | 23.0 | 61 | 63 | 62 | 61 | 65 | 62 | 11.23 | 14.26 |
| S. C | 20.5 | 18.5 | 20.0 | 20.0 | 21.0 | 21.0 | 20.4 | 21.5 | 23.5 | 20.0 | 19.0 | 69 | 72 | 66 | 71 | 71 | 67 | 14.68 | 12.73 |
| Ga | 19.0 | 15.5 | 16.7 | 17.2 | 19.0 | 18.2 | 21.5 | 20.8 | 22.0 | 20.0 | 19.5 | 67 | 70 | 65 | 68 | 70 | 66 | 13.84 | 12.87 |
| Fla | 16.2 | 14.0 | 13.7 | 14.5 | 17.0 | 16.2 | 13.5 | 17.2 | 18.0 | 18.0 | 20.0 | 71 | 75 | 70 | 70 | 70 | 70 | 11.58 | 14.00 |
| Ohio | 33.0 | 32.8 | 22.8 | 26.4 | 32.5 | 37.2 | 32.1 | 44.0 | 30.2 | 30.5 | 41.0 | 40 | 45 | 33 | 40 | 45 | 36 | 13.56 | 14.76 |
| Ind | 29.4 | 28.2 | 20.2 | 21.2 | 30.5 | 35.4 | 28.7 | 40.1 | 21.4 | 28.5 | 40.0 | 38 | 43 | 30 | 38 | 43 | 34 | 11.15 | 13.60 |
| Ill | 32.2 | 29.5 | 24.5 | 23.0 | 36.6 | 38.0 | 28.8 | 43.3 | 23.8 | 29.3 | 45.0 | 38 | 42 | 30 | 38 | 44 | 35 | 11.68 | 15.75 |
| Mich | 31.5 | 30.7 | 20.8 | 29.7 | 30.5 | 34.0 | 28.6 | 34.9 | 30.0 | 33.5 | 42.0 | 40 | 46 | 33 | 39 | 45 | 35 | 12.67 | 14.70 |
| Wis | 33.2 | 37.4 | 22.0 | 31.1 | 35.0 | 29.8 | 29.8 | 37.3 | 36.5 | 27.0 | 46.5 | 39 | 45 | 32 | 37 | 43 | 36 | 12.12 | 16.74 |
| Minn | 31.4 | 32.5 | 24.5 | 22.0 | 33.0 | 28.7 | 22.8 | 41.7 | 37.8 | 28.0 | 43.0 | 35 | 40 | 26 | 32 | 40 | 32 | 10.49 | 13.76 |
| Iowa | 32.4 | 33.8 | 24.2 | 24.3 | 27.0 | 37.8 | 25.5 | 44.2 | 34.5 | 33.0 | 40.0 | 34 | 41 | 27 | 34 | 41 | 32 | 11.57 | 12.80 |
| Mo | 24.1 | 22.8 | 21.5 | 19.3 | 27.0 | 33.6 | 14.8 | 33.0 | 21.2 | 21.5 | 26.0 | 40 | 45 | 35 | 45 | 44 | 38 | 9.59 | 9.88 |

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[1] Based upon farm price Dec. 1.

## OATS—Continued.

TABLE 32.—*Oats: Yield per acre, price per bushel Dec. 1, and value per acre, by States*—Continued.

| State. | Yield per acre (bushel). | | | | | | | | | | | Farm price per bushel (cents). | | | | | | Value per acre (dollars).[1] | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 10-year average, 1906–1915. | 1906 | 1907 | 1908 | 1909 | 1910 | 1911 | 1912 | 1913 | 1914 | 1915 | 10-year average, 1906–1915. | 1911 | 1912 | 1913 | 1914 | 1915 | 5-year average, 1910–1914. | 1915 |
| N. Dak. | 27.8 | 32.5 | 24.5 | 23.4 | 32.0 | 7.0 | 23.5 | 41.4 | 25.7 | 28.0 | 40.0 | 34 | 41 | 22 | 30 | 37 | 27 | 7.88 | 10.80 |
| S. Dak. | 27.4 | 36.4 | 24.7 | 23.0 | 30.0 | 23.0 | 7.4 | 33.8 | 26.5 | 27.5 | 42.0 | 34 | 43 | 25 | 34 | 38 | 28 | 7.60 | 11.76 |
| Nebr. | 25.4 | 29.5 | 20.4 | 22.0 | 25.0 | 28.0 | 13.9 | 24.4 | 26.5 | 32.0 | 32.0 | 35 | 43 | 30 | 38 | 40 | 31 | 8.80 | 9.92 |
| Kans. | 24.9 | 23.6 | 15.0 | 22.0 | 28.2 | 33.3 | 15.0 | 32.0 | 19.5 | 33.5 | 26.5 | 40 | 45 | 35 | 45 | 42 | 37 | 10.42 | 9.80 |
| Ky. | 21.5 | 21.5 | 17.6 | 16.2 | 22.3 | 25.0 | 18.4 | 26.9 | 19.8 | 21.0 | 26.0 | 48 | 50 | 44 | 52 | 53 | 48 | 10.74 | 12.48 |
| Tenn. | 21.6 | 21.5 | 20.8 | 21.0 | 20.0 | 23.0 | 19.5 | 21.7 | 21.0 | 23.0 | 24.5 | 50 | 50 | 47 | 53 | 53 | 50 | 10.77 | 12.25 |
| Ala. | 18.8 | 17.2 | 17.5 | 18.0 | 16.5 | 18.5 | 19.2 | 20.0 | 20.5 | 22.0 | 19.0 | 64 | 66 | 62 | 69 | 69 | 63 | 13.10 | 11.97 |
| Miss. | 18.9 | 18.0 | 17.9 | 17.5 | 16.0 | 19.2 | 18.4 | 17.4 | 20.0 | 23.0 | 21.5 | 62 | 65 | 60 | 63 | 65 | 60 | 12.10 | 12.90 |
| La. | 20.5 | 17.2 | 14.5 | 20.0 | 20.0 | 21 5 | 21.0 | 20.8 | 22.0 | 23.0 | 25.0 | 57 | 65 | 51 | 57 | 63 | 55 | 12.37 | 13.75 |
| Tex. | 29.0 | 34.8 | 19.0 | 28.9 | 18.7 | 35.0 | 25.1 | 36.0 | 32.5 | 25.0 | 35.5 | 50 | 54 | 43 | 51 | 48 | 42 | 14.81 | 14.91 |
| Okla. | 24.6 | 34.3 | 15.0 | 25.0 | 29.0 | 36.5 | 9.0 | 25.1 | 18.0 | 27.5 | 27.0 | 41 | 48 | 34 | 45 | 41 | 35 | 9.15 | 9.45 |
| Ark. | 22.9 | 20.5 | 19.5 | 21.4 | 22.8 | 27.5 | 20.0 | 19.9 | 26.5 | 24.0 | 27.0 | 52 | 53 | 50 | 53 | 53 | 52 | 11.99 | 14.04 |
| Mont. | 45.1 | 43.2 | 49.0 | 41.6 | 51.3 | 38.0 | 49.8 | 48.0 | 43.5 | 35.0 | 52.0 | 40 | 40 | 35 | 32 | 39 | 32 | 16.35 | 16.64 |
| Wyo. | 37.1 | 39.5 | 37.0 | 36.4 | 35.0 | 32.0 | 34.5 | 41.8 | 38.0 | 35.0 | 42.0 | 46 | 50 | 37 | 40 | 48 | 43 | 16.14 | 18.06 |
| Colo. | 38.7 | 40.4 | 38.0 | 39.5 | 38.0 | 39.1 | 35.0 | 42.8 | 35.0 | 40.0 | 39.0 | 46 | 48 | 38 | 44 | 45 | 41 | 16.89 | 15.99 |
| N. Mex. | 35.2 | 34.6 | 38.5 | 33.5 | 40.0 | 27.4 | 38.8 | 34.7 | 30.0 | 38.0 | 36.0 | 56 | 57 | 45 | 60 | 45 | 50 | 17.97 | 18.00 |
| Ariz. | 38.5 | 34.4 | 29.0 | 36.0 | 37.0 | 40.1 | 42.0 | 44.7 | 43.0 | 42.0 | 37.0 | 68 | 60 | 70 | 50 | 70 | 64 | 28.70 | 23.68 |
| Utah. | 46.1 | 43.7 | 45.0 | 40.5 | 46.1 | 43.0 | 44.7 | 46.4 | 46.0 | 50.0 | 47.0 | 46 | 47 | 49 | 40 | 43 | 45 | 20.86 | 21.15 |
| Nev. | 43.6 | 38.8 | 43.0 | 45.0 | 40.0 | 44.7 | 45.0 | 40.0 | 43.0 | 52.0 | 45.0 | 61 | 62 | 52 | 65 | 55 | 55 | 26.68 | 24.75 |
| Idaho. | 44.9 | 40.7 | 50.5 | 44.0 | 44.5 | 38.5 | 44.0 | 48.9 | 46.5 | 44.0 | 47.0 | 40 | 40 | 35 | 32 | 38 | 34 | 16.50 | 15.98 |
| Wash. | 47.9 | 43.2 | 55.5 | 44.5 | 49.0 | 42.8 | 51.7 | 48.2 | 47.5 | 47.0 | 50.0 | 43 | 45 | 40 | 40 | 42 | 37 | 20.36 | 18.50 |
| Oreg. | 36.9 | 33.8 | 35.0 | 33.4 | 37.8 | 34.5 | 34.7 | 38.2 | 42.3 | 35.0 | 44.0 | 44 | 44 | 41 | 38 | 45 | 37 | 15.79 | 16.28 |
| Cal. | 34.0 | 31.5 | 33.5 | 33.5 | 31.4 | 37.0 | 34.0 | 39.0 | 31.6 | 35.0 | 33.0 | 58 | 59 | 55 | 60 | 53 | 50 | 19.50 | 16.50 |
| U. S. | 30.0 | 31.2 | 23.7 | 25.0 | 30.3 | 31.6 | 24.4 | 37.4 | 29.2 | 29.7 | 37.8 | 39.4 | 45.0 | 31.9 | 39.2 | 43.8 | 36.1 | 11.65 | 13.62 |

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[1] Based upon farm price Dec. 1.

TABLE 33.—*Oats: Farm price per bushel on first of each month, by geographical divisions, 1914 and 1915.*

| Month. | United States. | | North Atlantic States. | | South Atlantic States. | | N. Central States east of Miss. R. | | N. Central States west of Miss. R. | | South Central States. | | Far Western States. | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1915 | 1914 | 1915 | 1914 | 1915 | 1914 | 1915 | 1914 | 1915 | 1914 | 1915 | 1914 | 1915 | 1914 |
| | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* |
| January | 45.0 | 39.1 | 52.5 | 47.0 | 65.7 | 63.4 | 45.1 | 37.8 | 41.9 | 35.1 | 51.5 | 51.3 | 43.4 | 39.0 |
| February | 50.1 | 39.3 | 57.0 | 48.3 | 67.4 | 63.9 | 51.1 | 37.4 | 47.1 | 34.9 | 56.1 | 54.8 | 46.1 | 39.5 |
| March | 52.1 | 38.9 | 61.2 | 48.0 | 70.2 | 62.9 | 52.0 | 37.4 | 48.8 | 34.7 | 59.6 | 52.8 | 50.2 | 38.8 |
| April | 53.4 | 39.5 | 61.5 | 48.8 | 71.8 | 62.4 | 54.1 | 38.3 | 50.1 | 35.1 | 60.9 | 52.5 | 49.8 | 39.7 |
| May | 53.4 | 39.5 | 64.3 | 49.0 | 70.9 | 61.9 | 54.0 | 38.2 | 49.6 | 34.8 | 58.9 | 52.2 | 52.1 | 41.8 |
| June | 51.3 | 40.0 | 62.2 | 49.4 | 70.4 | 62.4 | 51.4 | 38.7 | 47.9 | 35.9 | 56.6 | 51.5 | 49.9 | 40.6 |
| July | 46.7 | 38.8 | 61.5 | 49.6 | 66.3 | 62.6 | 46.2 | 37.7 | 43.0 | 34.6 | 49.1 | 45.1 | 47.9 | 41.8 |
| August | 45.4 | 36.7 | 59.3 | 49.5 | 63.6 | 60.0 | 44.0 | 36.1 | 42.9 | 31.6 | 45.6 | 44.2 | 46.6 | 39.4 |
| September | 38.5 | 42.3 | 54.9 | 53.2 | 62.9 | 63.9 | 36.1 | 42.8 | 34.2 | 38.1 | 44.5 | 47.8 | 42.9 | 40.9 |
| October | 34.5 | 43.3 | 46.6 | 51.7 | 63.6 | 66.4 | 32.1 | 43.2 | 30.4 | 39.9 | 44.6 | 49.3 | 37.3 | 41.8 |
| November | 34.9 | 42.9 | 45.5 | 51.1 | 62 3 | 65.2 | 33.5 | 43.2 | 30.7 | 39.2 | 44.4 | 49.7 | 37.1 | 40.8 |
| December | 36.1 | 43.8 | 45.0 | 51.7 | 62.7 | 66.3 | 35.2 | 44.0 | 31.3 | 40.2 | 44.5 | 49.7 | 37.7 | 43.3 |
| Average | 42.7 | 40.9 | 54.2 | 50.1 | 66.1 | 63.5 | 42.1 | 40.5 | 38.4 | 36.9 | 48.0 | 48.2 | 42.3 | 41.0 |

## OATS—Continued.

TABLE 34.—*Oats: Condition of crop, United States, on first of months named, 1895–1915.*

| Year. | June. | July. | August. | When harvested. | Year. | June. | July. | August. | When harvested. | Year. | June. | July. | August. | When harvested. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *P. ct.* | *P. ct.* | *P. ct.* | *P. ct.* | | *P. ct.* | *P. ct.* | *P. ct.* | *P. ct.* | | *P. ct.* | *P. ct.* | *P. ct.* | *P. ct.* |
| 1895.... | 84.3 | 83.2 | 84.5 | 86.0 | 1902.... | 90.6 | 92.1 | 89.4 | 87.2 | 1909.... | 88.7 | 88.3 | 85.5 | 83.8 |
| 1896.... | 98.8 | 96.3 | 77.3 | 74.0 | 1903.... | 85.5 | 84.3 | 79.5 | 75.7 | 1910.... | 91.0 | 82.2 | 81.5 | 83.3 |
| 1897.... | 89.0 | 87.5 | 86.0 | 84.6 | 1904.... | 89.2 | 89.8 | 86.6 | 85.6 | 1911.... | 85.7 | 68.8 | 65.7 | 64.5 |
| 1898.... | 98.0 | 92.8 | 84.2 | 79.0 | 1905.... | 92.9 | 92.1 | 90.8 | 90.3 | 1912.... | 91.1 | 89.2 | 90.3 | 92.3 |
| 1899.... | 88.7 | 90.0 | 90.8 | 87.2 | 1906.... | 85.9 | 84.0 | 82.8 | 81.9 | 1913.... | 87.0 | 76.3 | 73.8 | 74.0 |
| 1900.... | 91.7 | 85.5 | 85.0 | 82.9 | 1907.... | 81.6 | 81.0 | 75.6 | 65.5 | 1914.... | 89.5 | 84.7 | 79.4 | 75.8 |
| 1901.... | 85.3 | 83.7 | 73.6 | 72.1 | 1908.... | 92.9 | 85.7 | 76.8 | 69.7 | 1915.... | 92.2 | 93.9 | 91.6 | 91.1 |

TABLE 35.—*Oats: Wholesale price per bushel, 1900–1915.*

| Date. | New York. | | Baltimore. | | Cincinnati. | | Chicago. | | Milwaukee. | | Duluth. | | Detroit. | | San Francisco. | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | No. 2 white. | | No. 3 white. | | No. 2 mixed. | | Contract. | | No. 3 white. | | No. 3 white. | | Standard. | | White (per 100 lbs.). | |
| | Low. | High. | Low. | High. | Low. | High. | Low. | High. | Low. | High. | Low. | High. | Low. | High. | Low. | High. |
| | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts* | *Dols.* | *Dols.* |
| 1900.. | 26½ | 32½ | 24 | 31¼ | 21 | 28 | 21 | 26¼ | 24 | 29 | 22¼ | 27½ | 24 | 29½ | 1.22½ | 1.40 |
| 1901.. | 32 | 55 | 30 | 53½ | 25 | 50¾ | 23½ | 48¾ | 25½ | 48¾ | 25 | 46⅞ | 28 | 60½ | 1.02½ | 1.55 |
| 1902.. | 31 | 69 | 31 | 64 | 27 | 57 | 25 | 56 | 30½ | 58 | 27½ | 46⅝ | 34¾ | 61 | 1.15 | 1.50 |
| 1903.. | 39½ | 47½ | 37 | 46½ | 31½ | 43½ | 31½ | 45 | 33½ | 41 | 30½ | 39 | 35½ | 45 | 1.17½ | 1.37½ |
| 1904.. | 35½ | 58½ | 33½ | 49½ | 31 | 44½ | 28¼ | 46 | 28½ | 45 | 27¾ | 43 | 31¾ | 48¼ | 1.25 | 1.60 |
| 1905.. | 30 | •38½ | 27½ | 38½ | 35 | 35½ | 25 | 34¼ | 27½ | 35½ | 25 | 32¾ | 26¼ | 37 | 1.37½ | 1.80 |
| 1906.. | 35½ | 48 | 34 | 47 | 30 | 43 | 28⅞ | 42¾ | 29 | 43 | 28⅛ | 41 | 32 | 43¼ | ...... | ...... |
| 1907.. | 41 | 68 | 40 | 63 | 37 | 55½ | 33½ | 56½ | 32¾ | 56 | 33⅝ | 53 | 37 | 58 | 1.30 | 1.85 |
| 1908.. | 56½ | 59 | 51 | 63½ | 47 | 60 | 46 | 60½ | 45 | 62½ | 45¼ | 57 | 47 | 64 | 1.40 | 1.75 |
| 1909.. | 55½ | 62½ | 38½ | 64 | 35½ | 62 | 36½ | 62½ | 35½ | 62½ | 33 | 58½ | 36½ | 64½ | 1.55 | 2.25 |
| 1910.. | 36½ | 62½ | 35¼ | 53½ | 31½ | 52 | 29¾ | 49 | 30½ | 49½ | 29 | 47½ | 34 | 51 | 1.42½ | 1.75 |
| 1911.. | 35½ | 55 | 34¾ | 53½ | 31 | 51½ | 28⅞ | 47⅝ | 29¾ | 49 | 28⅜ | 47⅞ | 32 | 51 | 1.35 | 1.85 |
| 1912.. | 38½ | 64½ | 35 | 64½ | 32 | 61 | 30¼ | 58½ | 30¾ | 59¾ | 28¼ | 56⅛ | 33½ | 63½ | 1.47½ | 2.12½ |
| 1913.. | 41¼ | 50 | 35¼ | 48 | 33½ | 47 | 31⅝ | 43⅝ | 31¼ | 42½ | 27⅛ | 42⅜ | 34½ | 45½ | 1.37½ | 1.67½ |
| 1914.. | 43½ | 58½ | 41½ | 55½ | 35 | 52½ | 33½ | 51⅛ | 34¼ | 52 | 33⅛ | 50⅝ | 37¾ | 53 | 1.20 | 1.60 |
| 1915. | | | | | | | | | | | | | | | | |
| Jan... | 55½ | 64 | 52 | 60½ | 51 | 58½ | 49 | 58⅝ | 50 | 58¾ | 49¼ | 56⅞ | 52½ | 59¼ | 1.50 | 1.85 |
| Feb.. | 61½ | 66 | 61 | 62½ | 57 | 59½ | 53 | 60 | 53¾ | 61 | 52⅜ | 58⅜ | 56¼ | 62 | 1.77½ | 1.85 |
| Mar.. | 61 | 66½ | 59¼ | 64 | 56 | 61½ | 53⅝ | 60⅛ | 53 | 61½ | 51⅝ | 58⅞ | 56¼ | 62 | 1.72½ | 1.80 |
| Apr.. | 61½ | 64 | 62 | 62¾ | 56½ | 59½ | 53⅞ | 57½ | 54¾ | 58 | 52 | 56⅝ | 58½ | 61½ | 1.75 | 1.80 |
| May.. | 59 | 63½ | 56 | 62 | 51½ | 57 | 50½ | 56 | 51½ | 56¾ | 50⅛ | 54½ | 54½ | 58½ | 1.65 | 1.80 |
| June.. | 53¾ | 57½ | 50 | 56½ | 46 | 52 | 46⅞ | 49¾ | 47¼ | 51½ | 44⅛ | 48⅛ | 50 | 54 | 1.40 | 1.70 |
| July.. | 56½ | 65½ | 50½ | 63½ | 48 | 58 | 48¾ | 59½ | 49 | 57 | 47 | 58 | 51 | 59 | 1.42½ | 1.50 |
| Aug.. | 55 | 70½ | 41 | 66 | 36½ | 54 | 46 | 60 | 33¼ | 63 | 33¼ | 54½ | 41 | 65 | 1.37½ | 1.50 |
| Sept . | Nominal.. | | 38 | 40 | 33 | 38 | 35½ | 39 | 34 | 38 | 32 | 33⅜ | 36½ | 40 | 1.30 | 1.40 |
| Oct... | ...do...... | | 38 | 42 | 35 | 39 | 35¾ | 39⅝ | 34½ | 38½ | 31⅝ | 35⅝ | 39 | 42 | 1.30 | 1.40 |
| Nov.. | ...do...... | | 41 | 43 | 37 | 39 | 37¼ | 41½ | 35½ | 40⅜ | 32½ | 37⅞ | 38 | 41 | 1.35 | 1.40 |
| Dec .. | ...do...... | | 42½ | 48 | 39 | 45 | 40⅞ | 44 | 40½ | 45½ | 37⅝ | 42⅝ | 42 | 45 | 1.32½ | 1.40 |
| Year . | 53¾ | 70½ | 38 | 66 | 31 | 61½ | 35½ | 60⅛ | 33¼ | 61½ | 31⅝ | 58⅞ | 36½ | 65 | 1.30 | 1.85 |

## OATS—Continued.

### TABLE 36.—*Oats: International trade, calendar years 1912–1914.*

[See "General note," p. 417.]

EXPORTS.

[000 omitted.]

| Country. | 1912 | 1913 | 1914 (prelim.) | Country. | 1912 | 1913 | 1914 (prelim.) |
|---|---|---|---|---|---|---|---|
| | *Bushels.* | *Bushels.* | *Bushels.* | | *Bushels.* | *Bushels.* | *Bushels.* |
| Argentina | 61,731 | 61,298 | 24,368 | Roumania | 2,000 | 2,000 | .......... |
| Bulgaria | 173 | 173 | .......... | Russia | 58,457 | 41,309 | 18,977 |
| Canada | 9,660 | 31,732 | 19,287 | Sweden | 361 | 4,730 | 2,303 |
| China | 515 | 285 | 324 | United Kingdom | 631 | 1,655 | 854 |
| Chile | 2,714 | 3,687 | 3,372 | United States | 30,374 | 5,275 | 35,067 |
| Denmark | 179 | 194 | 168 | Other countries | 5,365 | 4,221 | .......... |
| Finland | 390 | 456 | .......... | | | | |
| Germany | 26,538 | 45,584 | .......... | Total | 240,384 | 233,730 | .......... |
| Netherlands | 41,316 | 31,131 | 14,589 | | | | |

IMPORTS.

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Austria-Hungary | 1,042 | 1,047 | .......... | Philippine Islands | 770 | 537 | 63 |
| Belgium | 9,560 | 9,555 | .......... | Russia | 1,200 | 2,608 | 1,475 |
| Denmark | 3,911 | 4,224 | 3,739 | Sweden | 6,703 | 4,431 | 4,918 |
| Cuba | 1,432 | 1,503 | 1,533 | Switzerland | 12,661 | 12,205 | 10,082 |
| Finland | 1,070 | 1,002 | .......... | United Kingdom | 64,924 | 64,470 | 49,348 |
| France | 14,929 | 39,992 | 35,448 | United States | 3,263 | 13,309 | 9,429 |
| Germany | 45,879 | 34,793 | .......... | Other countries | 2,678 | 2,461 | .......... |
| Italy | 10,830 | 7,331 | 4,549 | | | | |
| Netherlands | 51,304 | 38,711 | 20,417 | Total | 232,978 | 238,572 | .......... |
| Norway | 822 | 393 | 474 | | | | |

## BARLEY.

### TABLE 37.—*Area and production of undermentioned countries. 1913–1915.*

| Country. | Area. | | | Production. | | |
|---|---|---|---|---|---|---|
| | 1913 | 1914 | 1915 | 1913 | 1914 | 1915 |
| NORTH AMERICA. | *Acres.* | *Acres.* | *Acres.* | *Bushels.* | *Bushels.* | *Bushels.* |
| United States | 7,499,000 | 7,565,000 | 7,395,000 | 178,189,000 | 194,953,000 | 237,009,000 |
| Canada: | | | | | | |
| New Brunswick | 2,000 | 2,000 | 2,000 | 74,000 | 61,000 | 57,000 |
| Quebec | 89,000 | 85,000 | 85,000 | 2,263,000 | 2,261,000 | 2,312,000 |
| Ontario | 485,000 | 461,000 | 449,000 | 11,589,000 | 13,987,000 | 15,109,000 |
| Manitoba | 496,000 | 468,000 | 490,000 | 14,305,000 | 9,828,000 | 16,543,000 |
| Saskatchewan | 332,000 | 290,000 | 287,000 | 10,421,000 | 4,901,000 | 9,945,000 |
| Alberta | 197,000 | 178,000 | 185,000 | 6,334,000 | 4,806,000 | 6,542,000 |
| Other | 12,000 | 12,000 | 11,000 | 333,000 | 354,000 | 360,000 |
| Total Canada | 1,613,000 | 1,496,000 | 1,509,000 | 48,319,000 | 36,201,000 | 50,868,000 |
| Mexico | (1) | 292,000 | (1) | 7,000,000 | 10,839,000 | 10,000,000 |
| Total | .......... | .......... | .......... | 233,508,000 | 241,993,000 | 297,877,000 |
| SOUTH AMERICA. | | | | | | |
| Argentina | 368,000 | 418,000 | 418,000 | 4,455,000 | 8,037,000 | 8,000,000 |
| Chile | 131,000 | 153,000 | 224,000 | 4,596,000 | 5,567,000 | 3,750,000 |
| Uruguay | 3,000 | 14,000 | 4,000 | 38,000 | 165,000 | 37,000 |
| Total | 502,000 | 585,000 | 646,000 | 9,089,000 | 13,769,000 | 11,787,000 |

[1] No official statistics.

## BARLEY—Continued.

TABLE 37.—*Area and production of undermentioned countries, 1913–1915*—Continued.

| Country. | Area. | | | Production. | | |
|---|---|---|---|---|---|---|
| | 1913 | 1914 | 1915 | 1913 | 1914 | 1915 |
| EUROPE. | | | | | | |
| Austria-Hungary: | *Acres.* | *Acres.* | *Acres.* | *Bushels.* | *Bushels.* | *Bushels.* |
| Austria | 2,699,000 | (1) | (1) | 75,917,000 | 75,000,000 | 75,000,000 |
| Hungary proper | 2,887,000 | 2,705,000 | 2,830,000 | 79,825,000 | 65,265,000 | 56,186,000 |
| Croatia-Slavonia | 158,000 | (1) | (1) | 2,956,000 | 1,940,000 | 2,000,000 |
| Bosnia-Herzegovina | 263,000 | (1) | (1) | 3,904,000 | 3,000,000 | 3,000,000 |
| Total Austria-Hungary | 6,007,000 | ... | ... | 162,602,000 | 145,205,000 | 136,186,000 |
| Belgium | 84,000 | 84,000 | (1) | 4,217,000 | 4,232,000 | 4,000,000 |
| Bulgaria | 603,000 | 594,000 | (1) | 13,891,000 | 10,319,000 | 17,670,000 |
| Denmark | 597,000 | (1) | 644,000 | 24,997,000 | 20,780,000 | 25,898,000 |
| Finland | (1) | (1) | (1) | 5,414,000 | 4,047,000 | 5,000,000 |
| France | 1,878,000 | 1,780,000 | 1,760,000 | 46,116,000 | 44,818,000 | 36,248,000 |
| Germany | 4,087,000 | 3,909,000 | (1) | 168,709,000 | 144,125,000 | 150,000,000 |
| Italy | 620,000 | 610,000 | 608,000 | 10,803,000 | 6,917,000 | 11,050,000 |
| Netherlands | 66,000 | 67,000 | 63,000 | 3,132,000 | 3,019,000 | 3,233,000 |
| Norway | [2] 89,000 | (1) | (1) | 3,202,000 | 2,591,000 | 2,591,000 |
| Roumania | 1,390,000 | 1,405,000 | 1,371,000 | 27,339,000 | 25,505,000 | 28,688,000 |
| Russia: | | | | | | |
| Russia proper | 24,558,000 | ... | ... | 437,634,000 | ... | ... |
| Poland | 1,283,000 | ... | ... | 29,859,000 | ... | ... |
| Northern Caucasia | 4,326,000 | ... | ... | 90,100,000 | ... | ... |
| Total Russia, European | 30,167,000 | [3] 31,065,000 | [3] 29,748,000 | 557,593,000 | [4] 398,068,000 | [4] 475,109,000 |
| Serbia | 149,000 | (1) | (1) | 2,866,000 | 3,000,000 | 2,250,000 |
| Spain | 3,869,000 | 3,404,000 | 3,786,000 | 68,772,000 | 72,272,000 | 82,763,000 |
| Sweden | 442,000 | 436,000 | (1) | 16,912,000 | 12,195,000 | 14,000,000 |
| United Kingdom: | | | | | | |
| England | 1,470,000 | 1,420,000 | 1,152,000 | 49,384,000 | 48,205,000 | 35,134,000 |
| Wales | 89,000 | 84,000 | 80,000 | 2,792,000 | 2,743,000 | 2,479,000 |
| Scotland | 198,000 | 194,000 | 150,000 | 7,598,000 | 7,616,000 | 5,184,000 |
| Ireland | 173,000 | 172,000 | 142,000 | 8,004,000 | 8,073,000 | 5,885,000 |
| Total United Kingdom | 1,030,000 | 1,870,000 | 1,524,000 | 67,778,000 | 66,637,000 | 48,682,000 |
| Total | ... | ... | ... | 1,184,343,000 | 963,730,000 | 1,043,368,000 |
| ASIA. | | | | | | |
| India: | | | | | | |
| British | 7,236,000 | 6,121,000 | (1) | 40,973,000 | 33,320,000 | 40,000,000 |
| Native States | 981,000 | (1) | (1) | (1) | (1) | (1) |
| Total India | 8,217,000 | 6,121,000 | ... | 40,973,000 | 33,320,000 | 40,000,000 |
| Cyprus | (1) | (1) | (1) | 2,100,000 | 2,000,000 | 2,000,000 |
| Japanese Empire: | | | | | | |
| Japan | 3,296,000 | 3,294,000 | 3,195,000 | 101,477,000 | 85,775,000 | 93,342,000 |
| Formosa | 6,000 | (1) | (1) | 82,000 | 60,000 | 75,000 |
| Total Japanese Empire | 3,302,000 | ... | ... | 101,559,000 | 85,835,000 | 93,417,000 |
| Russia: | | | | | | |
| Central Asia (4 governments) | 447,000 | ... | ... | 5,593,000 | ... | ... |
| Siberia (4 governments) | 607,000 | ... | ... | 8,965,000 | ... | ... |
| Transcaucasia (1 government) | 2,000 | ... | ... | 28,000 | ... | ... |
| Total Russia, Asiatic | 1,056,000 | (5) | (5) | 14,586,000 | (5) | (5) |
| Total | ... | ... | ... | 159,218,000 | 121,155,000 | 135,417,000 |

[1] No official statistics.
[2] Census of 1910.
[3] 63 governments of European and 10 of Asiatic Russia.
[4] 51 governments of European and 10 of Asiatic Russia.
[5] Included in "Total Russia, European."

## BARLEY—Continued.

TABLE 37.—*Area and production of undermentioned countries, 1913–1915*—Continued.

| Country. | Area. | | | Production. | | |
|---|---|---|---|---|---|---|
| | 1913 | 1914 | 1915 | 1913 | 1914 | 1915 |
| AFRICA. | *Acres.* | *Acres.* | *Acres.* | *Bushels.* | *Bushels.* | *Bushels.* |
| Algeria | 3,152,000 | 3,131,000 | 2,703,000 | 50,031,000 | 35,785,000 | 39,866,000 |
| Tunis | 1,117,000 | 795,000 | 1,038,000 | 7,266,000 | 3,215,000 | 11,482,000 |
| Union of South Africa | (1) | (1) | (1) | [2] 1,359,000 | [2] 1,359,000 | [2] 1,359,000 |
| Total | | | | 58,656,000 | 40,359,000 | 52,707,000 |
| AUSTRALASIA. | | | | | | |
| Australia: | | | | | | |
| Queensland | 9,000 | 9,000 | 7,000 | 151,000 | 120,000 | 109,000 |
| New South Wales | 17,000 | (1) | (1) | 349,000 | 312,000 | (1) |
| Victoria | 72,000 | (1) | (1) | 1,800,000 | 1,870,000 | (1) |
| South Australia | 69,000 | 91,000 | 66,000 | 1,360,000 | 1,375,000 | 461,000 |
| Western Australia | 6,000 | (1) | 4,000 | 96,000 | 173,000 | 37,000 |
| Tasmania | 8,000 | (1) | (1) | 274,000 | 193,000 | (1) |
| Total Australia | 181,000 | | | 4,030,000 | 4,043,000 | 1,200,000 |
| New Zealand | 37,000 | 32,000 | 18,000 | 1,421,000 | 1,234,000 | 616,000 |
| Total Australasia | 218,000 | | | 5,451,000 | 5,277,000 | 1,816,000 |
| Grand total | | | | 1,650,265,000 | 1,386,283,000 | 1,542,972,000 |

[1] No official statistics.

[2] Census of 1911.

TABLE 38.—*Barley: Total production of countries mentioned in Table 37, 1895–1915.*

| Year. | Production. | Year. | Production. | Year. | Production. | Year. | Production. |
|---|---|---|---|---|---|---|---|
| | *Bushels.* | | *Bushels.* | | *Bushels.* | | *Bushels.* |
| 1895 | 915,504,000 | 1901 | 1,072,195,000 | 1906 | 1,296,579,000 | 1911 | 1,373,286,000 |
| 1896 | 932,100,000 | 1902 | 1,229,132,000 | 1907 | 1,271,237,000 | 1912 | 1,466,977,000 |
| 1897 | 864,605,000 | 1903 | 1,235,786,000 | 1908 | 1,274,897,000 | 1913 | 1,650,265,000 |
| 1898 | 1,030,581,000 | 1904 | 1,175,784,000 | 1909 | 1,458,263,000 | 1914 | 1,386,283,000 |
| 1899 | 965,720,000 | 1905 | 1,180,053,000 | 1910 | 1,388,734,000 | 1915 | 1,542,972,000 |
| 1900 | 959,622,000 | | | | | | |

TABLE 39.—*Barley: Average yield per acre of undermentioned countries, 1890–1914.*

| Year. | United States. | Russia (European).[1] | Germany.[1] | Austria.[1] | Hungary proper.[1] | France.[2] | United Kingdom.[2] |
|---|---|---|---|---|---|---|---|
| Average: | *Bushels.* | *Bushels.* | *Bushels.* | *Bushels.* | *Bushels.* | *Bushels.* | *Bushels.* |
| 1890–1899 | 23.4 | 13.3 | 29.4 | 21.1 | | 22.6 | 33.8 |
| 1900–1909 | 25.5 | 14.3 | 35.3 | 26.3 | 23.4 | 23.6 | 35.0 |
| 1905 | 26.8 | 14.3 | 33.3 | 24.0 | 24.5 | 23.4 | 35.9 |
| 1906 | 28.3 | 13.0 | 35.2 | 26.1 | 26.8 | 20.8 | 36.1 |
| 1907 | 23.8 | 14.2 | 38.2 | 27.3 | 23.1 | 24.4 | 36.8 |
| 1908 | 25.1 | 14.2 | 34.9 | 25.2 | 21.3 | 22.6 | 34.9 |
| 1909 | 22.5 | 17.9 | 39.5 | 28.4 | 25.1 | 25.4 | 38.9 |
| 1910 | 22.5 | 16.3 | 34.4 | 24.9 | 19.7 | 23.5 | 34.3 |
| 1911 | 21.0 | 14.4 | 37.0 | 27.5 | 26.9 | 25.0 | 34.0 |
| 1912 | 29.7 | 16.2 | 40.7 | 29.7 | 26.9 | 26.1 | 33.1 |
| 1913 | 23.8 | 18.5 | 41.3 | 29.7 | 27.6 | 24.5 | 35.1 |
| 1914 | 25.8 | | 36.8 | | 24.1 | 25.2 | 35.6 |
| Average (1905–1914) | 24.9 | | 37.1 | | 24.6 | 24.1 | 35.5 |

[1] Bushels of 48 pounds.

[2] Winchester bushels.

## BARLEY—Continued.

TABLE 40.—*Barley: Acreage, production, value, exports, etc., in the United States, 1849–1915.*

NOTE.—Figures in *italics* are census returns, figures in roman are estimates of the Department of Agriculture. Estimates of acres are obtained by applying estimated percentages of increase or decrease to the published numbers of the preceding year, except that a revised base is used for applying percentage estimates whenever new census data are available.

| Year | Acreage | Average yield per acre | Production | Average farm price per bushel Dec. 1 | Farm value Dec. 1 | Chicago cash price per bushel, low malting to fancy[1] December Low | December High | Following May Low | Following May High | Domestic exports, fiscal year beginning July 1 | Imports, fiscal year beginning July 1. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | *Acres* | *Bush.* | *Bushels* | *Cents* | *Dollars* | *Cents* | *Cents* | *Cents* | *Cents* | *Bushels* | *Bushels* |
| *1849* | | | *5,167,000* | | | | | | | | .. |
| *1859* | | | *15,826,000* | | | | | | | .. | .. |
| 1866 | 493,000 | 22.9 | 11,284,000 | 70.2 | 7,916,000 | 59 | 70 | 85 | 100 | | 3,247,250 |
| 1867 | 1,131,000 | 22.7 | 25,727,000 | 70.1 | 18,028,000 | 150 | 180 | 227 | 250 | 9,810 | 3,783,966 |
| 1868 | 937,000 | 24.4 | 22,896,000 | 109.0 | 24,948,000 | 140 | 170 | 149 | 175 | 59,077 | 5,069,880 |
| 1869 | 1,026,000 | 27.9 | 28,652,000 | 70.8 | 20,298,000 | 74 | 85 | 50 | 62 | 255,490 | 6,727,597 |
| *1869* | | | *29,761,000* | | | | | | | | |
| 1870 | 1,109,000 | 23.7 | 26,295,000 | 79.1 | 20,792,000 | 68 | 80 | 72 | 95 | 340,093 | 4,866,700 |
| 1871 | 1,114,000 | 24.0 | 26,718,000 | 75.8 | 20,264,000 | 55½ | 64 | 55 | 71 | 86,891 | 5,565,591 |
| 1872 | 1,397,000 | 19.2 | 26,846,000 | 68.6 | 18,416,000 | 60 | 70 | 71 | 85 | 482,410 | 4,244,751 |
| 1873 | 1,387,000 | 23.1 | 32,044,000 | 86.7 | 27,794,000 | 132 | 158 | 130 | 155 | 320,399 | 4,891,189 |
| 1874 | 1,581,000 | 20.6 | 32,552,000 | 86.0 | 27,998,000 | 120 | 129½ | 115 | 137 | 91,118 | 6,255,063 |
| 1875 | 1,790,000 | 20.6 | 36,909,000 | 74.1 | 27,368,000 | 81 | 88 | 62½ | 72½ | 317,781 | 10,285,957 |
| 1876 | 1,767,000 | 21.9 | 38,710,000 | 63.0 | 24,403,000 | 63¾ | 68½ | 80 | 85 | 1,186,129 | 6,702,965 |
| 1877 | 1,669,000 | 21.4 | 35,638,000 | 62.5 | 22,287,000 | 56¼ | 64 | 46½ | 52½ | 3,921,501 | 6,764,228 |
| 1878 | 1,790,000 | 23.6 | 42,246,000 | 57.9 | 24,454,000 | 91 | 100 | 64 | 73 | 715,536 | 5,720,979 |
| 1879 | 1,681,000 | 24.0 | 40,283,000 | 58.9 | 23,714,000 | 86 | 92 | 75 | 80 | 1,128,923 | 7,135,258 |
| *1879* | *1,998,000* | *22.0* | *43,997,000* | | | | | | | | |
| 1880 | 1,843,000 | 24.5 | 45,165,000 | 66.6 | 30,091,000 | 100 | 120 | 95 | 105 | 885,246 | 9,528,616 |
| 1881 | 1,968,000 | 20.9 | 41,161,000 | 82.3 | 33,863,000 | 101 | 107 | 100 | 100 | 205,930 | 12,182,722 |
| 1882 | 2,272,000 | 21.5 | 48,954,000 | 62.9 | 30,768,000 | 79 | 82 | 80 | 80 | 433,005 | 10,050,687 |
| 1883 | 2,379,000 | 21.1 | 50,136,000 | 58.7 | 29,420,000 | 62 | 67 | 65 | 74 | 724,955 | 8,596,122 |
| 1884 | 2,609,000 | 23.5 | 61,203,000 | 48.7 | 29,779,000 | 53 | 58 | 65 | 65 | 629,130 | 9,986,507 |
| 1885 | 2,729,000 | 21.4 | 58,360,000 | 56.3 | 32,868,000 | 62 | 65 | 58 | 60 | 252,183 | 10,197,115 |
| 1886 | 2,653,000 | 22.4 | 59,428,000 | 53.6 | 31,841,000 | 51 | 54 | 57 | 57 | 1,305,300 | 10,355,594 |
| 1887 | 2,902,000 | 19.6 | 56,812,000 | 51.9 | 29,464,000 | 80 | 80 | 69 | 77 | 550,884 | 10,831,461 |
| 1888 | 2,996,000 | 21.3 | 63,884,000 | 59.0 | 37,672,000 | | | | | 1,440,321 | 11,368,414 |
| 1889 | 3,221,000 | 24.3 | 78,333,000 | 41.6 | 32,614,000 | 58 | 58 | | | 1,408,311 | 11,332,545 |
| *1889* | *3,221,000* | *24.3* | *78,333,000* | | | | | | | | |
| 1890 | 3,135,000 | 21.4 | 67,168,000 | 62.7 | 42,141,000 | | | | | 973,062 | 5,078,733 |
| 1891 | 3,353,000 | 25.9 | 86,839,000 | 52.4 | 45,470,000 | | | | | 2,800,075 | 3,146,328 |
| 1892 | 3,400,000 | 23.6 | 80,097,000 | 47.5 | 38,026,000 | 60 | 67 | 65 | 65 | 3,035,267 | 1,970,129 |
| 1893 | 3,220,000 | 21.7 | 69,869,000 | 41.1 | 28,729,000 | 52 | 54 | 55 | 60 | 5,219,405 | 791,061 |
| 1894 | 3,171,000 | 19.4 | 61,400,000 | 44.2 | 27,134,000 | 53½ | 55½ | 51 | 52 | 1,563,754 | 2,116,816 |
| 1895 | 3,300,000 | 26.4 | 87,073,000 | 33.7 | 29,312,000 | 33 | 40 | 25 | 36 | 7,680,331 | 837,384 |
| 1896 | 2,951,000 | 23.6 | 69,695,000 | 32.3 | 22,491,000 | 22 | 37 | 24½ | 35 | 20,030,301 | 1,271,787 |
| 1897 | 2,719,000 | 24.5 | 66,685,000 | 37.7 | 25,142,000 | 25½ | 42 | 36 | 53 | 11,237,077 | 124,804 |
| 1898 | 2,583,000 | 21.6 | 55,792,000 | 41.3 | 23,064,000 | 40 | 50½ | 36 | 42 | 2,267,403 | 110,475 |
| 1899 | 2,878,000 | 25.5 | 73,382,000 | 40.3 | 29,594,000 | 35 | 45 | 36 | 44 | 23,661,662 | 189,757 |
| *1899* | *4,470,000* | *26.8* | *119,635,000* | | | | | | | | ... |
| 1900 | 2,894,000 | 20.4 | 58,926,000 | 40.9 | 24,075,000 | 37 | 61 | 37 | 57 | 6,293,207 | 171,004 |
| 1901 | 4,296,000 | 25.6 | 109,933,000 | 45.2 | 49,705,000 | 56 | 63 | 64 | 72 | 8,714,268 | 57,406 |
| 1902 | 4,661,000 | 29.0 | 134,954,000 | 45.9 | 61,899,000 | 36 | 70 | 48 | 56 | 8,429,141 | 56,462 |
| 1903 | 4,993,000 | 26.4 | 131,861,000 | 45.6 | 60,166,000 | 42 | 61½ | 38 | 59 | 10,881,627 | 90,708 |
| 1904 | 5,146,000 | 27.2 | 139,749,000 | 42.0 | 58,652,000 | 38 | 52 | 40 | 50 | 10,661,655 | 81,020 |
| 1905 | 5,096,000 | 26.8 | 136,551,000 | 40.5 | 54,993,000 | 37 | 53 | 42 | 55½ | 17,729,360 | 18,049 |
| 1906 | 6,324,000 | 28.3 | 178,916,000 | 41.5 | 74,236,000 | 44 | 56 | 66 | 85 | 8,238,842 | 38,319 |
| 1907 | 6,448,000 | 23.8 | 153,597,000 | 66.6 | 102,290,000 | 78 | 102 | 60 | 75 | 4,349,078 | 199,741 |
| 1908 | 6,646,000 | 25.1 | 166,756,000 | 55.4 | 92,442,000 | 57 | 64½ | 66 | 75 | 6,580,393 | 2,644 |
| 1909 | 7,011,000 | 24.3 | 170,284,000 | | | | | | | | ...... |
| *1909* | *7,698,000* | *22.5* | *173,321,000* | 54.0 | 93,526,000 | 55 | 72 | 50 | 68 | 4,311,566 | ...... |
| 1910[2] | 7,743,000 | 22.5 | 173,832,000 | 57.8 | 100,426,000 | 72 | 90 | 75 | 115 | 9,399,346 | ...... |
| 1911 | 7,627,000 | 21.0 | 160,240,000 | 86.9 | 139,182,000 | 102 | 130 | 68 | 132 | 1,585,242 | ...... |
| 1912 | 7,530,000 | 29.7 | 223,824,000 | 50.5 | 112,957,000 | 43 | 77 | 45 | 68 | 17,536,703 | ...... |
| 1913 | 7,499,000 | 23.8 | 178,189,000 | 53.7 | 95,731,000 | 50 | 79 | 51 | 66 | 6,644,747 | ...... |
| 1914 | 7,565,000 | 25.8 | 194,953,000 | 54.3 | 105,903,000 | 60 | 75 | 74½ | 82 | 26,754,522 | ...... |
| 1915 | 7,395,000 | 32.0 | 237,009,000 | 51.7 | 122,499,000 | 62 | 77 | . | ...... | ...... | ...... |

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[1] Prices 1895 to 1908 for No. 3 grade.

[2] Figures adjusted to census basis.

## BARLEY—Continued.

### TABLE 41.—*Barley: Acreage, production, and total farm value, by States, 1915.*

[000 omitted.]

| State. | Acreage. | Production. | Farm value Dec. 1. |
|---|---|---|---|
| | *Acres.* | *Bushels.* | *Dollars.* |
| Maine | 5 | 132 | 99 |
| New Hampshire | 1 | 30 | 24 |
| Vermont | 12 | 420 | 315 |
| New York | 85 | 2,720 | 2,040 |
| Pennsylvania | 8 | 236 | 177 |
| Maryland | 5 | 170 | 119 |
| Virginia | 12 | 348 | 261 |
| Ohio | 30 | 930 | 502 |
| Indiana | 8 | 224 | 146 |
| Illinois | 54 | 1,836 | 1,047 |
| Michigan | 85 | 2,508 | 1,555 |
| Wisconsin | 656 | 23,288 | 13,041 |
| Minnesota | 1,350 | 41,175 | 20,176 |
| Iowa | 353 | 10,943 | 5,362 |
| Missouri | 5 | 125 | 79 |
| North Dakota | 1,400 | 44.800 | 19,712 |
| South Dakota | 750 | 24,000 | 11,040 |
| Nebraska | 105 | 3,255 | 1,367 |
| Kansas | 270 | 8,370 | 3,515 |
| Kentucky | 6 | 180 | 139 |
| Tennessee | 6 | 144 | 108 |
| Texas | 9 | 252 | 171 |
| Oklahoma | 8 | 212 | 106 |
| Montana | 80 | 2,720 | 1,306 |
| Wyoming | 17 | 612 | 337 |
| Colorado | 130 | 4,680 | 2,246 |
| New Mexico | 8 | 264 | 185 |
| Arizona | 35 | 1,295 | 725 |
| Utah | 34 | 1,445 | 751 |
| Nevada | 12 | 576 | 403 |
| Idaho | 191 | 7,736 | 4,023 |
| Washington | 175 | 7,263 | 4,067 |
| Oregon | 130 | 4,680 | 2,902 |
| California | 1,360 | 39,440 | 24,453 |
| United States | 7,395 | 237,009 | 122,499 |

### TABLE 42.—*Barley: Yield per acre, price per bushel Dec. 1, and value per acre, by States.*

| State. | Yield per acre (bushels) | | | | | | | | | | | Farm price per bushel (cents). | | | | | | Value per acre (dollars).[1] | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 10-year average, 1906-1915. | 1906 | 1907 | 1908 | 1909 | 1910 | 1911 | 1912 | 1913 | 1914 | 1915 | 10-year average, 1906-1915. | 1911 | 1912 | 1913 | 1914 | 1915 | 5-year average, 1910-1914. | 1915 |
| Me | 28.6 | 31.5 | 28.0 | 28.0 | 28.5 | 31.0 | 28.0 | 26.2 | 28.0 | 30.0 | 26.5 | 78 | 90 | 77 | 80 | 81 | 75 | 23.13 | 19.88 |
| N. H | 26.2 | 21.4 | 24.0 | 21.0 | 25.0 | 26.0 | 21.0 | 28.0 | 28.0 | 32.0 | 30.0 | 79 | 86 | 84 | 80 | 82 | 79 | 22.50 | 23.70 |
| Vt | 32.2 | 32.8 | 28.5 | 33.0 | 30.0 | 31.0 | 30.5 | 35.0 | 32.0 | 34.5 | 35.0 | 74 | 82 | 80 | 80 | 75 | 75 | 25.11 | 26.25 |
| N. Y | 26.8 | 26.3 | 25.0 | 26.0 | 24.8 | 28.3 | 25.0 | 26.0 | 26.7 | 28.0 | 32.0 | 72 | 97 | 68 | 69 | 71 | 75 | 20.01 | 24.00 |
| Pa | 26.1 | 25.0 | 25.5 | 26.0 | 21.8 | 26.5 | 25.0 | 27.5 | 26.0 | 28.0 | 29.5 | 67 | 65 | 68 | 71 | 70 | 75 | 17.94 | 22.12 |
| Md | 30.3 | 31.0 | 33.0 | 30.0 | 32.0 | 31.0 | 23.0 | 27.0 | 29.0 | 33.0 | 34.0 | 62 | 60 | 68 | 64 | 66 | 70 | 18.28 | 23.80 |
| Va | 27.2 | 28.6 | 29.0 | 28.0 | 28.5 | 29.3 | 23.0 | 25.0 | 26.0 | 26.0 | 29.0 | 70 | 70 | 75 | 70 | 80 | 75 | 18.70 | 21.75 |
| Ohio | 27.8 | 30.0 | 28.0 | 27.5 | 25.9 | 28.5 | 27.2 | 31.0 | 24.0 | 25.0 | 31.0 | 61 | 84 | 55 | 58 | 59 | 54 | 17.13 | 16.74 |
| Ind | 25.7 | 29.4 | 20.5 | 23.0 | 23.5 | 27.0 | 26.5 | 29.5 | 25.0 | 25.0 | 28.0 | 62 | 75 | 60 | 50 | 67 | 65 | 16.30 | 18.20 |
| Ill | 29.4 | 30.0 | 28.0 | 28.5 | 28.0 | 30.2 | 28.0 | 31.5 | 26.0 | 29.5 | 34.0 | 60 | 92 | 53 | 57 | 61 | 57 | 18.44 | 19.38 |
| Mich | 25.5 | 26.1 | 22.0 | 25.5 | 24.7 | 26.0 | 24.0 | 26.0 | 24.8 | 26.0 | 29.5 | 61 | 86 | 65 | 60 | 65 | 62 | 16.88 | 18.29 |
| Wis | 28.0 | 30.7 | 23.0 | 30.0 | 28.0 | 25.9 | 25.5 | 29.4 | 25.0 | 27.3 | 35.5 | 63 | 99 | 55 | 60 | 62 | 56 | 17.98 | 19.88 |
| Minn | 24.5 | 28.0 | 22.5 | 25.0 | 23.6 | 21.0 | 19.0 | 28.2 | 24.0 | 23.0 | 30.5 | 54 | 96 | 41 | 48 | 53 | 49 | 13.22 | 14.94 |
| Iowa | 26.7 | 28.3 | 25.5 | 27.0 | 22.0 | 29.5 | 21.9 | 31.0 | 25.0 | 26.0 | 31.0 | 55 | 93 | 52 | 55 | 55 | 49 | 16.21 | 15.19 |
| Mo | 23.8 | 24.2 | 23.0 | 23.0 | 25.0 | 27.0 | 20.0 | 24.8 | 22.0 | 24.0 | 25.0 | 62 | 75 | 66 | 60 | 65 | 63 | 15.27 | 15.75 |
| N. Dak | 21.1 | 25.8 | 18.3 | 19.5 | 21.0 | 5.5 | 19.5 | 29.9 | 20.0 | 19.5 | 32.0 | 48 | 85 | 35 | 40 | 45 | 44 | 9.37 | 14.08 |
| S. Dak | 22.0 | 29.0 | 23.0 | 26.5 | 19.5 | 18.2 | 5.4 | 26.0 | 17.5 | 23.0 | 32.0 | 51 | 88 | 42 | 46 | 50 | 46 | 9.12 | 14.72 |
| Nebr | 21.6 | 28.0 | 20.8 | 23.5 | 22.0 | 18.5 | 11.0 | 22.0 | 16.0 | 23.5 | 31.0 | 46 | 60 | 42 | 49 | 47 | 42 | 8.61 | 13.02 |
| Kans | 18.1 | 23.5 | 12.0 | 16.0 | 18.0 | 18.0 | 6.5 | 23.5 | 8.1 | 24.5 | 31.0 | 48 | 60 | 40 | 55 | 47 | 42 | 7.48 | 13.02 |
| Ky | 26.4 | 26.0 | 25.0 | 25.0 | 24.0 | 24.0 | 28.7 | 26.0 | 26.0 | 28.5 | 30.0 | 73 | 79 | 75 | 78 | 77 | 77 | 20.09 | 23.10 |
| Tenn | 24.5 | 23.0 | 20.0 | 25.0 | 24.0 | 23.0 | 28.0 | 26.0 | 25.0 | 27.0 | 24.0 | 76 | 90 | 80 | 70 | 82 | 75 | 20.81 | 18.00 |
| Tex | 23.9 | 24.5 | 17.0 | 24.0 | 19.4 | 30.0 | 18.0 | 29.3 | 24.0 | 25.0 | 28.0 | 79 | 93 | 78 | 81 | 70 | 68 | 20.71 | 19.04 |
| Okla | 21.5 | 29.8 | 18.7 | 23.0 | 23.0 | 30.0 | 10.0 | 20.0 | 9.0 | 25.0 | 26.5 | 55 | 61 | 50 | 80 | 53 | 50 | 10.55 | 13.25 |
| Mont | 33.8 | 33.0 | 38.0 | 35.0 | 38.0 | 28.0 | 34.5 | 36.5 | 31.0 | 30.5 | 34.0 | 57 | 68 | 53 | 48 | 53 | 48 | 18.24 | 16.32 |
| Wyo | 32.7 | 31.4 | 32.0 | 35.0 | 31.0 | 30.0 | 34.0 | 34.0 | 30.5 | 33.0 | 36.0 | 66 | 75 | 62 | 61 | 64 | 55 | 21.28 | 19.80 |
| Colo | 35.7 | 41.0 | 40.0 | 33.0 | 36.0 | 32.0 | 29.0 | 39.0 | 32.5 | 38.5 | 36.0 | 58 | 69 | 50 | 56 | 55 | 48 | 19.62 | 17.28 |
| N. Mex | 31.9 | 27.0 | 26.0 | 42.0 | 40.0 | 25.0 | 33.0 | 35.0 | 24.0 | 34.0 | 33.0 | 75 | 70 | 71 | 72 | 75 | 70 | 22.15 | 23.10 |
| Ariz | 38.0 | 42.2 | 35.5 | 38.0 | 40.0 | 36.0 | 36.5 | 40.0 | 39.0 | 36.0 | 37.0 | 78 | 87 | 87 | 73 | 60 | 56 | 29.81 | 20.72 |
| Utah | 41.8 | 44.0 | 39.0 | 45.0 | 40.0 | 36.0 | 43.0 | 45.0 | 38.5 | 45.0 | 42.5 | 57 | 66 | 59 | 55 | 50 | 52 | 24.04 | 22.10 |
| Nev | 40.2 | 36.8 | 40.0 | 30.0 | 38.0 | 40.0 | 40.0 | 41.0 | 41.0 | 47.0 | 48.0 | 77 | 81 | 87 | 90 | 65 | 70 | 32.70 | 33.60 |
| Idaho | 40.6 | 41.0 | 44.5 | 41.0 | 40.0 | 33.0 | 42.0 | 48.5 | 42.0 | 38.0 | 40.5 | 54 | 70 | 51 | 48 | 50 | 52 | 21.45 | 21.06 |
| Wash | 37.7 | 36.5 | 40.5 | 30.5 | 39.5 | 29.0 | 37.0 | 43.0 | 40.5 | 39.0 | 41.5 | 57 | 68 | 53 | 52 | 52 | 56 | 21.16 | 23.24 |
| Oreg | 34.0 | 35.0 | 42.0 | 29.0 | 31.5 | 31.5 | 34.0 | 36.0 | 35.0 | 30.0 | 36.0 | 59 | 65 | 55 | 55 | 61 | 62 | 19.80 | 22.32 |
| Cal | 28.0 | 27.2 | 28.9 | 23.5 | 26.5 | 31.0 | 28.0 | 30.0 | 26.0 | 30.0 | 29.0 | 68 | 85 | 70 | 68 | 59 | 62 | 19.46 | 17.98 |
| U. S | 25.6 | 28.3 | 23.8 | 25.1 | 24.3 | 22.5 | 21.0 | 29.7 | 23.8 | 25.8 | 32.0 | 57.4 | 86.9 | 50.5 | 53.7 | 54.3 | 51.7 | 14.60 | 16.57 |

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[1] Based upon farm price Dec. 1.

## BARLEY—Continued.

TABLE 43.—*Barley: Condition of crop, United States, on first of months named, 1894–1915.*

| Year. | June. | July. | August. | When harvested. | Year. | June. | July. | August. | When harvested. |
|---|---|---|---|---|---|---|---|---|---|
|  | *P. ct.* | *P. ct.* | *P. ct.* | *P. ct.* |  | *P. ct.* | *P. ct.* | *P. ct.* | *P. ct.* |
| 1894 | 82.2 | 76.8 | 69.8 | 71.5 | 1905 | 93.7 | 91.5 | 89.5 | 87.8 |
| 1895 | 90.3 | 91.9 | 87.2 | 87.6 | 1906 | 93.5 | 92.5 | 90.3 | 89.4 |
| 1896 | 98.0 | 88.1 | 82.9 | 83.1 | 1907 | 84.9 | 84.4 | 84.5 | 78.5 |
| 1897 | 87.4 | 88.5 | 87.5 | 86.4 | 1908 | 89.7 | 86.2 | 83.1 | 81.2 |
| 1898 | 78.8 | 85.7 | 79.3 | 79.2 | 1909 | 90.6 | 90.2 | 85.4 | 80.5 |
| 1899 | 91.4 | 92.0 | 93.6 | 86.7 | 1910 | 89.6 | 73.7 | 70.0 | 69.8 |
| 1900 | 86.2 | 76.3 | 71.6 | 70.7 | 1911 | 90.2 | 72.1 | 66.2 | 65.5 |
| 1901 | 91.0 | 91.3 | 86.9 | 83.8 | 1912 | 91.1 | 88.3 | 89.1 | 88.9 |
| 1902 | 93.6 | 93.7 | 90.2 | 89.7 | 1913 | 87.1 | 76.6 | 74.9 | 73.4 |
| 1903 | 91.5 | 86.8 | 83.4 | 82.1 | 1914 | 95.5 | 92.6 | 85.3 | 82.4 |
| 1904 | 90.5 | 88.5 | 88.3 | 87.4 | 1915 | 94.6 | 94.1 | 93.8 | 94.2 |

TABLE 44.—*Barley: Farm price per bushel on first of each month, by geographical divisions, 1914 and 1915.*

| Month. | United States. |  | North Atlantic States. |  | South Atlantic States. |  | N. Central States east of Miss. R. |  | N. Central States west of Miss. R. |  | South Central States. |  | Far Western States. |  |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  | 1915 | 1914 | 1915 | 1914 | 1915 | 1914 | 1915 | 1914 | 1915 | 1914 | 1915 | 1914 | 1915 | 1914 |
|  | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* |
| January | 54.3 | 52.2 | 77.2 | 71.2 | 73.0 | 67.0 | 62.1 | 58.2 | 49.8 | 44.4 | 62.5 | 75.0 | 56.9 | 60.6 |
| February | 62.9 | 52.4 | 80.6 | 68.3 | 76.0 | 72.5 | 67.0 | 55.7 | 59.4 | 45.5 | 76.5 | 70.8 | 65.4 | 60.4 |
| March | 67.7 | 51.1 | 84.9 | 72.0 | 81.0 | 68.0 | 72.6 | 54.4 | 61.9 | 45.4 | 80.2 | 73.2 | 73.2 | 57.2 |
| April | 64.7 | 51.7 | 81.0 | 72.4 | 73.4 | 70.2 | 72.3 | 53.5 | 59.9 | 44.3 | 70.8 | 66.5 | 68.1 | 61.0 |
| May | 63.8 | 49.3 | 87.7 | 74.7 | 78.0 | 67.5 | 69.5 | 53.6 | 60.3 | 43.1 | 71.3 | 70.7 | 65.6 | 55.6 |
| June | 62.0 | 49.1 | 83.0 | 71.9 | 78.2 | 71.8 | 68.6 | 53.4 | 60.1 | 43.4 | 85.2 | 75.3 | 61.2 | 54.9 |
| July | 55.8 | 47.5 | 85.6 | 73.1 | 76.0 | 75.2 | 66.4 | 48.9 | 56.0 | 42.2 | 70.8 | 64.0 | 50.4 | 53.5 |
| August | 56.7 | 45.1 | 81.6 | 69.7 | 78.0 | 73.8 | 66.8 | 53.1 | 56.8 | 40.3 | 57.0 | 50.0 | 51.8 | 47.9 |
| September | 51.9 | 52.5 | 80.2 | 75.4 | 74.0 | 75.0 | 58.8 | 60.3 | 46.7 | 52.4 | 56.5 | 61.5 | 55.0 | 48.5 |
| October | 46.8 | 51.8 | 72.5 | 74.7 | 69.2 | 74.0 | 52.6 | 61.2 | 40.1 | 46.4 | 60.0 | 60.0 | 52.9 | 54.9 |
| November | 50.1 | 51.7 | 73.5 | 73.8 | 78.0 | 72.0 | 55.3 | 59.1 | 43.0 | 47.7 | 53.7 | 56.2 | 57.3 | 53.8 |
| December | 51.7 | 54.3 | 75.0 | 72.1 | 73.4 | 74.9 | 56.6 | 62.2 | 46.2 | 49.8 | 66.5 | 69.5 | 58.5 | 57.0 |
| Average | 53.7 | 51.5 | 77.7 | 72.9 | 74.7 | 72.6 | 60.4 | 58.4 | 47.3 | 47.1 | 62.5 | 62.5 | 57.5 | 54.7 |

## BARLEY—Continued.

### TABLE 45.—*Barley: Wholesale price per bushel, 1900–1915.*

| Date. | Cincinnati. |  | Chicago. |  | Milwaukee. |  | Minneapolis. |  | San Francisco. |  |
|---|---|---|---|---|---|---|---|---|---|---|
|  | Spring malt. |  | Low malting to fancy. |  | No. 3. |  | All grades. |  | Feed (per 100 lbs.).[1] |  |
|  | Low. | High. | Low. | High. | Low. | High. | Low. | High. | Low. | High. |
|  | *Cents.* | *Cents.* | *Cents.* | *Cents.* | *Cents.* | *Cents.* | *Cents.* | *Cents.* | *Dolls.* | *Dolls.* |
| 1900 | 53 | 78 | 34 | 67 | 33 | 56 | 32 | 59 | 0.67½ | 0.75 |
| 1901 | 67 | 80 | 38 | 66 | 36 | 62 | 25 | 62 | .73¾ | .85 |
| 1902 | 68 | 88 | 37 | 73 | ........ | ........ | 30 | 70 | .80 | 1.32½ |
| 1903 | 60 | 72 | 36 | 62 | 35 | 60 | 32 | 68 | .90 | 1.22½ |
| 1904 | 58 | 74 | 30 | 61 | 34 | 57 | 28 | 56 | .95 | 1.15 |
| 1905 | 57 | 65 | 35 | 55 | 36 | 49 | 30 | 48 | 1.02½ | 1.35 |
| 1906 | 58 | 75 | 38 | 58 | 37 | 54 | 31 | 51 | ........ | ........ |
| 1907 | 63 | 132 | 45 | 110 | 44 | 108 | 40 | 108 | 1.12½ | 1.72½ |
| 1908 | 71 | 132 | 49 | 106 | 48 | 102 | 44 | 102 | 1.22½ | 1.57½ |
| 1909 | 71 | 90 | 50 | 82½ | 50 | 82½ | 40 | 79 | 1.35 | 1.70 |
| 1910 | 76 | 103 | 50 | 90 | 56 | 88 | 48 | 76½ | .95 | 1.50 |
| 1911 | 101 | 137 | 70 | 139 | 72 | 129 | 58 | 120 | 1.10 | 1.98½ |
| 1912 | 69 | 146 | 40 | 140 | 54 | 136 | 33 | 130 | 1.15 | 1.95 |
| 1913 | 72 | 92 | 42 | 85 | 58 | 80 | 39 | 73 | 1.22½ | 1.50 |
| 1914 | 75 | 105 | 49 | 82 | 51½ | 82 | 40 | 76 | .90 | 1.32½ |
| 1915. |  |  |  |  |  |  |  |  |  |  |
| January | 72 | 90 | 66 | 88 | 70½ | 88 | 58 | 83 | 1.25 | 1.60 |
| February | 86 | 90 | 73 | 91 | 78 | 93 | 64 | 86 | 1.42½ | 1.62½ |
| March | 79 | 90 | 71 | 89 | 74½ | 86 | 62 | 81 | 1.25 | 1.47½ |
| April | 76 | 82 | 71 | 84 | 76 | 80½ | 64 | 76 | 1.25 | 1.47½ |
| May | 76 | 102 | 74½ | 82 | 75½ | 78½ | 67 | 75 | 1.11¼ | 1.30 |
| June | 86 | 98 | 68 | 79 | 71 | 77½ | 62 | 71 | 1.00 | 1.12½ |
| July | 86 | 98 | 69 | 79 | 72½ | 79 | 63 | 73 | 1.00 | 1.20 |
| August | 88 | 98 | 54 | 85 | 61 | 81 | 45 | 78 | 1.15 | 1.30 |
| September | 76 | 102 | 51 | 65 | 54 | 60 | 42 | 57 | 1.12½ | 1.20 |
| October | 70 | 86 | 53 | 65 | 56 | 62 | 47 | 57 | 1.15 | 1.30 |
| November | 70 | 76 | 56 | 73 | 59 | 68 | 50 | 62 | 1.22½ | 1.32½ |
| December | 76 | 79 | 62 | 77 | 67 | 73½ | 56 | 67½ | 1.25 | 1.32½ |
| Year | 70 | 102 | 51 | 91 | 54 | 93 | 42 | 86 | 1.00 | 1.62½ |

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[1] No. 1 brewing to 1902 and 1907.

## BARLEY—Continued.

### TABLE 46.—*Barley and malt: International trade, calendar years 1912–1914.*

[See "General note," p. 417.]

EXPORTS.

[000 omitted.]

| Country. | Barley. | | | Malt. | | | Barley and malt in terms of barley. | | |
|---|---|---|---|---|---|---|---|---|---|
| | 1912 | 1913 | 1914 (prelim.) | 1912 | 1913 | 1914 (prelim.) | 1912 | 1913 | 1914 (prelim.) |
| | *Bushels.* | *Bushels.* | *Bushels.* | *Bushels.* | *Bushels.* | *Bushels.* | *Bushels.* | *Bushels.* | *Bushels.* |
| Argentina | 656 | 1,871 | 1,152 | ........ | ........ | ........ | 656 | 1,871 | 1,152 |
| Austria-Hungary | 9,522 | 8,190 | ........ | 11,996 | 12,189 | ........ | 20,428 | 19,271 | ........ |
| Belgium | 4,737 | 2,612 | ........ | 231 | 218 | ........ | 4,946 | 2,811 | ........ |
| British India | 31,843 | 10,069 | 1,290 | ........ | ........ | ........ | 31,843 | 10,069 | 1,290 |
| Bulgaria | 819 | 819 | ........ | ........ | ........ | ........ | 819 | 819 | ........ |
| Canada | 4,788 | 13,906 | 6,838 | 24 | 3 | 5 | 4,810 | 13,909 | 6,843 |
| Chile | 476 | 427 | 2,839 | 19 | 23 | 233 | 494 | 449 | 2,860 |
| China | 655 | 738 | 524 | ........ | ........ | ........ | 655 | 738 | 524 |
| Denmark | 3,552 | 3,566 | 3,380 | 112 | 117 | ........ | 3,654 | 3,673 | ........ |
| France | 669 | 438 | 167 | 48 | 19 | ........ | 712 | 455 | ........ |
| Germany | 53 | 280 | ........ | 1,255 | 1,198 | ........ | 1,194 | 1,369 | ........ |
| Netherlands | 23,950 | 31,993 | 13,265 | 755 | 449 | ........ | 24,642 | 32,402 | ........ |
| Roumania | 10,928 | [1] 10,928 | ........ | 3 | [1] 3 | ........ | 10,930 | [1] 10,930 | ........ |
| Russia | 126,927 | 180,344 | 90,747 | 198 | 197 | ........ | 127,107 | 180,523 | 90,747 |
| United Kingdom | 102 | 48 | 85 | 952 | 806 | 898 | 967 | 781 | 902 |
| United States | 8,195 | 12,782 | 17,208 | 150 | 487 | 728 | 8,332 | 13,225 | 17,871 |
| Other countries | 13,456 | 15,957 | ........ | 6 | 11 | ........ | 13,460 | 15,967 | ........ |
| Total | 241,334 | 294,968 | ........ | 15,748 | 15,720 | ........ | 255,861 | 309,262 | ........ |

IMPORTS.

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Argentina | 3 | 4 | 1 | 1,444 | 1,597 | 1,134 | 1,316 | 1,456 | 1,032 |
| Austria-Hungary | 331 | 351 | ........ | ........ | 2 | ........ | 331 | 353 | ........ |
| Belgium | 21,830 | 17,336 | ........ | 674 | 734 | ........ | 22,443 | 18,004 | ........ |
| Brazil | 2 | 1 | 1 | 1,062 | 1,364 | 702 | 967 | 1,241 | 639 |
| British South Africa | 2 | 2 | 1 | 395 | 348 | 289 | 361 | 319 | 265 |
| Canada | 7 | 38 | 39 | 58 | 358 | 107 | 59 | 363 | 136 |
| Cuba | 328 | 273 | 285 | ........ | ........ | ........ | 328 | 273 | 285 |
| Denmark | 578 | 1,933 | ........ | 55 | 58 | ........ | 628 | 1,986 | ........ |
| Egypt | 415 | 1,338 | ........ | 54 | 534 | 42 | 464 | 1,824 | 512 |
| France | 6,290 | 5,330 | 4,757 | 103 | 108 | ........ | 6,384 | 5,428 | ........ |
| Finland | 254 | 392 | ........ | 267 | 278 | ........ | 497 | 645 | ........ |
| Germany | 136,383 | 148,728 | ........ | 2,948 | 3,532 | ........ | 139,063 | 151,939 | ........ |
| Italy | 878 | 728 | 82 | ........ | ........ | 1,034 | 878 | 728 | 82 |
| Netherlands | 30,747 | 40,783 | 21,445 | 3,612 | 4,183 | ........ | 34,030 | 44,585 | ........ |
| Norway | 3,763 | 3,851 | 3,747 | 108 | 157 | 241 | 3,862 | 3,994 | 3,966 |
| Russia | 791 | 1,106 | 64 | 23 | 58 | 15 | 812 | 1,158 | 77 |
| Switzerland | 1,126 | 1,190 | 769 | 3,810 | 3,302 | ........ | 4,500 | 4,192 | ........ |
| United Kingdom | 45,899 | 52,331 | 36,442 | 79 | 146 | 137 | 45,970 | 52,464 | 36,547 |
| Other countries | 2,680 | 1,216 | ........ | 570 | 660 | ........ | 3,198 | 1,816 | ........ |
| Total | 252,307 | 276,931 | ........ | 15,262 | 17,420 | ........ | 266,181 | 292,767 | ........ |

[1] Year preceding.

# RYE.

TABLE 47.—*Rye: Area and production of undermentioned countries, 1913–1915.*

| Country. | Area. | | | Production. | | |
|---|---|---|---|---|---|---|
| | 1913 | 1914 | 1915 | 1913 | 1914 | 1915 |
| NORTH AMERICA. | | | | | | |
| | *Acres.* | *Acres.* | *Acres.* | *Bushels.* | *Bushels.* | *Bushes.* |
| United States | 2,557,000 | 2,541,000 | 2,856,000 | 41,381,000 | 42,779,000 | 49,190,000 |
| Canada: | | | | | | |
| Quebec | 10,000 | 9,000 | 9,000 | 156,000 | 156,000 | 169,000 |
| Ontario | 85,000 | 78,000 | 78,000 | 1,567,000 | 1,341,000 | 1,602,000 |
| Manitoba | 5,000 | 5,000 | 6,000 | 103,000 | 100,000 | 129,000 |
| Saskatchewan | 3,000 | 3,000 | 3,000 | 68,000 | 54,000 | 72,000 |
| Alberta | 16,000 | 16,000 | 17,000 | 398,000 | 360,000 | 500,000 |
| Other | (1) | (1) | (1) | 8,000 | 6,000 | 6,000 |
| Total Canada | 119,000 | 111,000 | 113,000 | 2,300,000 | 2,017,000 | 2,478,000 |
| Mexico | (2) | (2) | (2) | 70,000 | 70,000 | 70,000 |
| Total | ............ | ............ | ............ | 43,751,000 | 44,866,000 | 51,738,000 |
| SOUTH AMERICA. | | | | | | |
| Argentina | 99,000 | 227,000 | 228,000 | 1,417,000 | 3,346,000 | 1,811,000 |
| Chile | 7,000 | 6,000 | (2) | 147,000 | 151,000 | 150,000 |
| Uruguay | (1) | (1) | (1) | 1,000 | 5,000 | 1,000 |
| Total | ............ | ............ | ............ | 1,565,000 | 3,502,000 | 1,962,000 |
| EUROPE. | | | | | | |
| Austria-Hungary: | | | | | | |
| Austria | 4,852,000 | (2) | (2) | 109,093,000 | 95,000,000 | 105,000,000 |
| Hungary | 2,668,000 | 2,638,000 | 2,625,000 | 52,256,000 | 42,410,000 | 45,975,000 |
| Croatia-Slavonia | 167,000 | (2) | (2) | 2,553,000 | 2,000,000 | 2,500,000 |
| Bosnia-Herzegovina | 65,000 | (2) | (2) | 627,000 | 500,000 | 600,000 |
| Total Austria-Hungary | 7,752,000 | ............ | ............ | 164,529,000 | 139,910,000 | 154,075,000 |
| Belgium | 641,000 | 645,000 | (2) | 22,463,000 | 21,000,000 | 18,000,000 |
| Bulgaria | 515,000 | 501,000 | (2) | 9,401,000 | 6,976,000 | 7,622,000 |
| Denmark | 607,000 | (2) | 521,000 | 16,637,000 | 10,905,000 | 12,989,000 |
| Finland | (2) | (2) | (2) | 10,289,000 | 10,806,000 | 10,000,000 |
| France | 2,905,000 | 2,614,000 | 2,603,000 | 49,452,000 | 43,884,000 | 40,307,000 |
| Germany | 15,849,000 | 15,565,000 | (2) | 481,169,000 | 410,478,000 | 475,000,000 |
| Italy | 307,000 | 304,000 | 294,000 | 5,589,000 | 5,260,000 | 4,401,000 |
| Netherlands | 562,000 | 563,000 | 549,000 | 16,895,000 | 13,471,000 | 13,727,000 |
| Norway | [3] 37,000 | (2) | (2) | 973,000 | 1,046,000 | 1,045,000 |
| Roumania | 224,000 | 208,000 | 187,000 | 3,711,000 | 1,959,000 | 2,911,000 |
| Russia: | | | | | | |
| Russia proper | 66,008,000 | ............ | ............ | 872,711,000 | ............ | ............ |
| Poland | 5,361,000 | ............ | ............ | 91,653,000 | ............ | ............ |
| Northern Caucasia | 513,000 | ............ | ............ | 7,596,000 | ............ | ............ |
| Total Russia, European | 71,882,000 | [4] 69,517,000 | [4] 69,024,000 | 971,960,000 | [5] 806,000,000 | [5] 861,097,000 |
| Serbia | 74,000 | (2) | (2) | 937,000 | 1,000,000 | 800,000 |
| Spain | 1,917,000 | 1,887,000 | 1,858,000 | 27,916,000 | 23,950,000 | 28,664,000 |
| Sweden | 911,000 | 981,000 | (2) | 22,266,000 | 27,599,000 | 25,000,000 |
| United Kingdom | 64,000 | 67,000 | 62,000 | 1,750,000 | 1,800,000 | 1,700,000 |
| Total | ............ | ............ | ............ | 1,805,937,000 | 1,526,044,000 | 1,657,338,000 |
| ASIA. | | | | | | |
| Russia: | | | | | | |
| Central Asia (4 governments) | 129,000 | ............ | ............ | 792,000 | ............ | ............ |
| Siberia (4 governments) | 2,749,000 | ............ | ............ | 28,148,000 | ............ | ............ |
| Transcaucasia (1 government) | 1,000 | ............ | ............ | 8,000 | ............ | ............ |
| Total Russia, Asiatic | 2,879,000 | (6) | (6) | 28,948,000 | (6) | (6) |

[1] Less than 500 acres.
[2] No official statistics.
[3] Census of 1910.
[4] 63 governments of European and 10 of Asiatic Russia.
[5] 51 governments of European and 10 of Asiatic Russia.
[6] Included in "Total Russia, European."

## RYE—Continued.

### TABLE 47.—*Rye: Area and production of undermentioned countries, 1913–1915*—Continued.

| Country. | Area. | | | Production. | | |
|---|---|---|---|---|---|---|
| | 1913 | 1914 | 1915 | 1913 | 1914 | 1915 |
| AUSTRALASIA. | | | | | | |
| Australia: | *Acres.* | *Acres.* | *Acres.* | *Bushels.* | *Bushels.* | *Bushels.* |
| Queensland | (1) | (2) | (2) | 2,000 | (2) | (2) |
| New South Wales | 3,000 | (2) | (2) | 42,000 | (2) | (2) |
| Victoria | 1,000 | 2,000 | (2) | 18,000 | 20,000 | (2) |
| South Australia | 1,000 | (2) | (2) | 10,000 | 13,000 | 6,000 |
| Western Australia | 1,000 | (2) | (2) | 4,000 | (2) | (2) |
| Tasmania | 1,000 | (2) | (2) | 20,000 | (2) | (2) |
| Total Australia | 7,000 | (2) | (2) | 96,000 | 100,000 | 30,000 |
| New Zealand | (2) | (2) | (2) | 90,000 | 90,000 | 90,000 |
| Total Australasia | ........ | ........ | ........ | 186,000 | 190,000 | 120,000 |
| Grand total | ........ | ........ | ........ | 1,880,387,000 | 1,574,602,000 | 1,711,158,000 |

(1) Less than 500 acres.

(2) No official statistics.

### TABLE 48.—*Rye: Total production of countries mentioned in Table 47, 1895–1915.*

| Year. | Production. | Year. | Production. | Year. | Production. | Year. | Production. |
|---|---|---|---|---|---|---|---|
| | *Bushels.* | | *Bushels.* | | *Bushels.* | | *Bushels.* |
| 1895 | 1,468,212,000 | 1901 | 1,416,022,000 | 1906 | 1,433,395,000 | 1911 | 1,753,933,000 |
| 1896 | 1,499,250,000 | 1902 | 1,647,845,000 | 1907 | 1,538,778,000 | 1912 | 1,886,517,000 |
| 1897 | 1,300,645,000 | 1903 | 1,659,961,000 | 1908 | 1,590,057,000 | 1913 | 1,880,387,000 |
| 1898 | 1,461,171,000 | 1904 | 1,742,112,000 | 1909 | 1,747,123,000 | 1914 | 1,574,602,000 |
| 1899 | 1,583,179,000 | 1905 | 1,495,751,000 | 1910 | 1,673,473,000 | 1915 | 1,711,158,000 |
| 1900 | 1,557,634,000 | | | | | | |

### TABLE 49.—*Rye: Average yield per acre of undermentioned countries, 1890–1914.*

| Year | United States. | Russia (European).[1] | Germany.[1] | Austria.[1] | Hungary proper.[1] | France.[2] | Ireland.[1] |
|---|---|---|---|---|---|---|---|
| Average: | *Bushels.* | *Bushels.* | *Bushels.* | *Bushels.* | *Bushels.* | *Bushels.* | *Bushels.* |
| 1890–1899 | 13.9 | 10.4 | 20.9 | 16.1 | ........ | 17.6 | 25.2 |
| 1900–1909 | 15.7 | 11.5 | 25.6 | 19.0 | 17.6 | 17.1 | 27.5 |
| 1905 | 16.5 | 10.1 | 24.9 | 20.2 | 19.4 | 18.5 | 27.0 |
| 1906 | 16.7 | 8.8 | 25.1 | 19.9 | 19.8 | 16.3 | 27.6 |
| 1907 | 16.4 | 10.8 | 25.8 | 18.9 | 16.0 | 18.2 | 27.0 |
| 1908 | 16.4 | 11.0 | 28.0 | 22.0 | 17.5 | 16.8 | 29.2 |
| 1909 | 13.4 | 12.6 | 28.8 | 22.3 | 17.8 | 18.1 | 30.8 |
| 1910 | 16.0 | 12.3 | 27.1 | 21.3 | 18.9 | 14.7 | 30.3 |
| 1911 | 15.6 | 10.5 | 28.2 | 20.9 | 18.7 | 15.8 | 29.0 |
| 1912 | 16.8 | 14.3 | 29.5 | 23.3 | 19.4 | 16.5 | 30.6 |
| 1913 | 16.2 | 13.5 | 30.4 | 22.0 | 19.6 | 17.0 | 30.0 |
| 1914 | 16.8 | ........ | 26.4 | ........ | 16.1 | 16.8 | 29.4 |
| Average (1905–1914). | 16.1 | ........ | 27.4 | ........ | 18.3 | 16.9 | 29.1 |

[1] Bushels of 56 pounds.

[2] Winchester bushels.

## RYE—Continued.

**Table 50.**—*Rye: Acreage, production, value, exports, etc., in the United States, 1849–1915.*

Note.—Figures in *italics* are census returns; figures in roman are estimates of the Department of Agriculture. Estimates of acres are obtained by applying estimated percentages of increase or decrease to the published numbers of the preceding year, except that a revised base is used for applying percentage estimates whenever new census data are available.

| Year. | Acreage harvested. | Average yield per acre. | Production. | Average farm price per bushel Dec. 1. | Farm value Dec. 1. | Chicago cash price per bushel, No. 2. | | | | Domestic exports, including rye flour, fiscal year beginning July 1. |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | December. | | Following May. | | |
| | | | | | | Low. | High. | Low. | High. | |
| | *Acres.* | *Bush.* | *Bushels.* | *Cents.* | *Dollars.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Bushels.* |
| *1849* | ...... | ...... | *14,189,000* | ...... | ...... | ...... | ...... | ...... | ...... | ...... |
| *1859* | ...... | ...... | *21,101,000* | ...... | ...... | ...... | ...... | ...... | ...... | ...... |
| 1866 | 1,548,000 | 13.5 | 20,865,000 | 82.2 | 17,150,000 | ...... | ...... | 142 | 150 | 234,971 |
| 1867 | 1,689,000 | 13.7 | 23,184,000 | 100.4 | 23,281,000 | 132 | 157 | 173 | 185 | 564,901 |
| 1868 | 1,651,000 | 13.6 | 22,505,000 | 94.9 | 21,349,000 | 106½ | 118 | 100 | 115½ | 92,869 |
| 1869 | 1,658,000 | 13.6 | 22,528,000 | 77.0 | 17,342,000 | 66 | 77½ | 78 | 83½ | 199,450 |
| *1869* | ...... | ...... | *16,919,000* | ...... | ...... | ...... | ...... | ...... | ...... | ...... |
| 1870 | 1,176,000 | 13.2 | 15,474,000 | 73.2 | 11,327,000 | 67 | 74 | 81 | 91 | 87,174 |
| 1871 | 1,070,000 | 14.4 | 15,366,000 | 71.1 | 10,928,000 | 62 | 63¾ | 75 | 93 | 832,689 |
| 1872 | 1,049,000 | 14.2 | 14,889,000 | 67.6 | 10,071,000 | 57½ | 70 | 68½ | 70 | 611,749 |
| 1873 | 1,150,000 | 13.2 | 15,142,000 | 70.3 | 10,638,000 | 70 | 81 | 91 | 102 | 1,923,404 |
| 1874 | 1,117,000 | 13.4 | 14,991,000 | 77.4 | 11,610,000 | 93 | 99½ | 103 | 107½ | 267,058 |
| 1875 | 1,360,000 | 13.0 | 17,722,000 | 67.1 | 11,894,000 | 67 | 68¾ | 61½ | 70½ | 589,159 |
| 1876 | 1,468,000 | 13.9 | 20,375,000 | 61.4 | 12,505,000 | 65½ | 73 | 70 | 92½ | 2,234,856 |
| 1877 | 1,413,000 | 15.0 | 21,170,000 | 57.6 | 12,202,000 | 55½ | 56½ | 54 | 60 | 4,249,684 |
| 1878 | 1,623,000 | 15.9 | 25,843,000 | 52.5 | 13,566,000 | 44 | 44½ | 47 | 52 | 4,877,821 |
| 1879 | 1,625,000 | 14.5 | 23,639,000 | 65.6 | 15,507,000 | 73½ | 81 | 73½ | 85 | 2,943,894 |
| *1879* | *1,842,000* | *10.8* | *19,832,000* | ...... | ...... | ...... | ...... | ...... | ...... | ...... |
| 1880 | 1,768,000 | 13.9 | 24,541,000 | 75.6 | 18,565,000 | 82 | 91½ | 115 | 118 | 1,955,155 |
| 1881 | 1,789,000 | 11.6 | 20,705,000 | 93.3 | 19,327,000 | 96½ | 98 | 77 | 83 | 1,003,609 |
| 1882 | 2,228,000 | 13.4 | 29,960,000 | 61.5 | 18,439,000 | 57 | 58½ | 62 | 67 | 2,206,212 |
| 1883 | 2,315,000 | 12.1 | 28,059,000 | 58.1 | 16,301,000 | 56½ | 60 | 60½ | 62½ | 6,247,590 |
| 1884 | 2,344,000 | 12.2 | 28,640,000 | 51.9 | 14,857,000 | 51 | 52 | 68 | 73 | 2,974,390 |
| 1885 | 2,129,000 | 10.2 | 21,756,000 | 57.9 | 12,595,000 | 58½ | 61 | 58 | 61 | 216,699 |
| 1886 | 2,130,000 | 11.5 | 24,489,000 | 53.8 | 13,181,000 | 53 | 54½ | 54½ | 56½ | 377,302 |
| 1887 | 2,053,000 | 10.1 | 20,693,000 | 54.5 | 11,283,000 | 55½ | 61½ | 63 | 68 | 94,827 |
| 1888 | 2,365,000 | 12.0 | 28,415,000 | 58.8 | 16,722,000 | 50 | 52 | 39 | 41½ | 309,266 |
| 1889 | 2,171,000 | 13.1 | 28.420,000 | 42.3 | 12,010,000 | 44 | 45½ | 49½ | 54 | 2,280,975 |
| *1889* | *2,172,000* | *13.1* | *28,421,000* | ...... | ...... | ...... | ...... | ...... | ...... | ...... |
| 1890 | 2,142,000 | 12.0 | 25,807,000 | 62.9 | 16,230,000 | 64½ | 68½ | 83 | 92 | 358,263 |
| 1891 | 2,176,000 | 14.6 | 31,752,000 | 77.4 | 24,589,000 | 86 | 92 | 70½ | 79 | 12,068,628 |
| 1892 | 2,164,000 | 12.9 | 27,979,000 | 54.2 | 15,160,000 | 46 | 51 | 50½ | 62 | 1,493,924 |
| 1893 | 2,038,000 | 13.0 | 26,555,000 | 51.3 | 13,612,000 | 45 | 47½ | 44½ | 48 | 249,152 |
| 1894 | 1,945,000 | 13.7 | 26,728,000 | 50.1 | 13,395,000 | 47½ | 49 | 62½ | 67 | 32,045 |
| 1895 | 1,890,000 | 14.4 | 27,210,000 | 44.0 | 11,965,000 | 32 | 35¾ | 33 | 36½ | 1,011,128 |
| 1896 | 1,831,000 | 13.3 | 24,369,000 | 40.9 | 9,961,000 | 37 | 42½ | 32¾ | 35½ | 8,575,663 |
| 1897 | 1,704,000 | 16.1 | 27,363,000 | 44.7 | 12,240,000 | 45¾ | 47 | 48 | 75 | 15,562,035 |
| 1898 | 1,643,000 | 15.6 | 25,658,000 | 46.3 | 11,875,000 | 52½ | 55½ | 56½ | 62 | 10,160,822 |
| 1899 | 1,659,000 | 14.4 | 23,962,000 | 51.0 | 12,214,000 | 49 | 52 | 53 | 56¼ | 2,382,012 |
| *1899* | *2,054,000* | *12.4* | *25,569,000* | ...... | ...... | ...... | ...... | ...... | ...... | ...... |
| 1900 | 1,591,000 | 15.1 | 23,996,000 | 51.2 | 12,295,000 | 45¾ | 49¾ | 51½ | 54 | 2,345,512 |
| 1901 | 1,988,000 | 15.3 | 30,345,000 | 55.7 | 16,910,000 | 59 | 65¾ | 54½ | 58 | 2,712,077 |
| 1902 | 1,979,000 | 17.0 | 33,631,000 | 50.8 | 17,081,000 | 48 | 49¾ | 48 | 50½ | 5,445,273 |
| 1903 | 1,907,000 | 15.4 | 29,363,000 | 54.5 | 15,994.000 | 50½ | 52½ | 69¾ | 78 | 784,068 |
| 1904 | 1,793,000 | 15.2 | 27,242,000 | 68.8 | 18,748,000 | 73 | 75 | 70 | 84 | 29,749 |
| 1905 | 1,730,000 | 16.5 | 28,486,000 | 61.1 | 17,414,000 | 64 | 68 | 58 | 62 | 1,387,826 |
| 1906 | 2,002,000 | 16.7 | 33,375,000 | 58.9 | 19,671,000 | 61 | 65 | 69 | 87½ | 769,717 |
| 1907 | 1,926,000 | 16.4 | 31,566,000 | 73.1 | 23,068,000 | 75 | 82 | 79 | 86 | 2,444,588 |
| 1908 | 1,948,000 | 16.4 | 31,851,000 | 73.6 | 23,455,000 | 75 | 77½ | 83 | 90 | 1,295,701 |
| 1909 | 2,006,000 | 16.1 | 32,239,000 | ...... | ...... | ...... | ...... | ...... | ...... | ...... |
| *1909* | *2,196,000* | *13.4* | *29,520,000* | 71.8 | 21,164,000 | 72 | 80 | 74 | 80 | 242,262 |
| 1910[1] | 2,185,000 | 16.0 | 34,897,000 | 71.5 | 24,953,000 | 80 | 82 | 90 | 118 | 40,123 |
| 1911 | 2,127,000 | 15.6 | 33,119,000 | 83.2 | 27,557,000 | 91 | 94 | 90 | 95½ | 31,384 |
| 1912 | 2,117,000 | 16.8 | 35,664,000 | 66.3 | 23,636,000 | 58 | 64 | 60 | 64 | 1,854,738 |
| 1913 | 2,557,000 | 16.2 | 41,381,000 | 63.4 | 26,220,000 | 61 | 65 | 62 | 67 | 2,272,492 |
| 1914 | 2,541,000 | 16.8 | 42,779,000 | 86.5 | 37,018,000 | 107½ | 112½ | 115 | 122 | 13,026,778 |
| 1915 | 2,856,000 | 17.2 | 49,190,000 | 83.9 | 41,295,000 | 94½ | 98½ | ...... | ...... | ...... |

[1] Figures adjusted to census basis.

## RYE—Continued.

### TABLE 51.—*Rye: Acreage, production, and total farm value, by States, 1915.*

[000 omitted.]

| State. | Acreage. | Production. | Farm value Dec. 1. | State. | Acreage. | Production. | Farm value Dec 1. |
|---|---|---|---|---|---|---|---|
| | *Acres.* | *Bushels.* | *Dollars.* | | *Acres.* | *Bushels.* | *Dollars.* |
| Vermont | 1 | 17 | 14 | North Dakota | 180 | 2,700 | 2,133 |
| Massachusetts | 3 | 60 | 61 | South Dakota | 90 | 1,755 | 1,334 |
| Connecticut | 7 | 150 | 153 | Nebraska | 200 | 3,500 | 2,555 |
| New York | 150 | 2,805 | 2,609 | Kansas | 50 | 800 | 608 |
| New Jersey | 71 | 1,420 | 1,306 | Kentucky | 24 | 288 | 271 |
| Pennsylvania | 274 | 4,932 | 4,143 | Tennessee | 18 | 189 | 195 |
| Delaware | 1 | 16 | 16 | Alabama | 4 | 40 | 54 |
| Maryland | 24 | 396 | 348 | Texas | 2 | 34 | 35 |
| Virginia | 70 | 1,015 | 944 | Oklahoma | 6 | 81 | 62 |
| West Virginia | 16 | 224 | 208 | Arkansas | 1 | 10 | 10 |
| North Carolina | 50 | 575 | 604 | Montana | 10 | 225 | 146 |
| South Carolina | 3 | 30 | 45 | Wyoming | 9 | 180 | 162 |
| Georgia | 13 | 120 | 168 | Colorado | 30 | 525 | 368 |
| Ohio | 100 | 1,750 | 1,452 | Utah | 13 | 202 | 131 |
| Indiana | 150 | 2,400 | 1,968 | | | | |
| | | | | Idaho | 3 | 60 | 41 |
| Illinois | 49 | 906 | 752 | Washington | 8 | 146 | 110 |
| Michigan | 390 | 6,045 | 5,138 | Oregon | 23 | 414 | 373 |
| Wisconsin | 420 | 7,770 | 6,760 | California | 8 | 112 | 101 |
| Minnesota | 300 | 5,850 | 4,738 | | | | |
| Iowa | 60 | 1,110 | 888 | United States | 2,856 | 49,190 | 41,295 |
| Missouri | 25 | 338 | 291 | | | | |

### TABLE 52.—*Rye: Condition of crop, United States, on first of months named, 1891–1916.*

| Year. | December of previous year. | April | May. | June. | When harvested. | Year. | December of previous year. | April. | May. | June. | When harvested. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | *P. ct.* | *P. ct.* | *P. ct.* | *P. ct.* | *P. ct.* | | *P. ct.* | *P. ct.* | *P. ct.* | *P. ct.* | *P. ct.* |
| 1891 | 99.0 | 95.4 | 97.2 | 95.4 | 93.9 | 1904 | 92.7 | 82.3 | 81.2 | 86.3 | 88.9 |
| 1892 | 88.8 | 87.0 | 88.9 | 91.0 | 92.8 | 1905 | 90.5 | 92.1 | 93.5 | 94.0 | 93.2 |
| 1893 | 89.4 | 85.7 | 82.7 | 84.6 | 85.3 | 1906 | 95.4 | 90.9 | 92.9 | 89.9 | 91.3 |
| 1894 | 94.6 | 94.4 | 90.7 | 93.2 | 87.0 | 1907 | 96.2 | 92.0 | 88.0 | 88.1 | 89.7 |
| 1895 | 96.2 | 87.0 | 88.7 | 85.7 | 80.7 | 1908 | 91.4 | 89.1 | 90.3 | 91.3 | 91.2 |
| 1896 | 88.1 | 82.9 | 87.7 | 85.2 | 88.4 | 1909 | 87.6 | 87.2 | 88.1 | 89.6 | 91.4 |
| 1897 | 99.8 | 88.9 | 88.0 | 89.9 | 93.4 | 1910 | 94.1 | 92.3 | 91.3 | 90.6 | 87.5 |
| 1898 | 91.0 | 92.1 | 94.5 | 97.1 | 94.6 | 1911 | 92.6 | 89.3 | 90.0 | 88.6 | 85.0 |
| 1899 | 98.9 | 84.9 | 85.2 | 84.5 | 85.6 | 1912 | 93.3 | 87.9 | 87.5 | 87.7 | 88.2 |
| 1900 | 98.2 | 84.8 | 88.5 | 87.6 | 80.4 | 1913 | 93.5 | 89.3 | 91.0 | 90.9 | 88.6 |
| 1901 | 99.1 | 93.1 | 94.6 | 93.9 | 93.0 | 1914 | 95.3 | 91.3 | 93.4 | 93.6 | 92.9 |
| 1902 | 89.9 | 85.4 | 83.4 | 88.1 | 90.2 | 1915 | 93.6 | 89.5 | 93.3 | 92.0 | 92.0 |
| 1903 | 98.1 | 97.9 | 93.3 | 90.6 | 89.5 | 1916 | 91.5 | ...... | ...... | ...... | ........ |

## RYE—Continued.

**TABLE 58.**—*Rye: Yield per acre, price per bushel Dec. 1, and value per acre, by States.*

| State. | Yield per acre (bushels). | | | | | | | | | | | Farm price per bushel (cents). | | | | | | Value per acre (dollars).[1] | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 10-year average, 1906-1915. | 1906 | 1907 | 1908 | 1909 | 1910 | 1911 | 1912 | 1913 | 1914 | 1915 | 10-year average, 1906-1915. | 1911 | 1912 | 1913 | 1914 | 1915 | 5-year average, 1910-1914. | 1915 |
| Vt. | 18.0 | 17.4 | 17.0 | 15.0 | 15.5 | 17.5 | 22.5 | 20.0 | 18.0 | 20.0 | 17.0 | 86 | 95 | 90 | 90 | 80 | 85 | 17.29 | 14.45 |
| Mass. | 17.3 | 15.0 | 16.5 | 16.5 | 16.2 | 17.0 | 16.0 | 18.5 | 18.5 | 19.0 | 20.0 | 94 | 95 | 100 | 98 | 101 | 102 | 17.40 | 20.40 |
| Conn. | 18.8 | 18.0 | 17.0 | 18.5 | 18.7 | 20.0 | 18.5 | 17.5 | 19.3 | 19.0 | 21.5 | 89 | 93 | 92 | 92 | 98 | 102 | 17.38 | 21.93 |
| N. Y. | 17.3 | 17.6 | 16.5 | 16.5 | 17.0 | 18.3 | 16.7 | 16.5 | 17.2 | 17.7 | 18.7 | 80 | 89 | 76 | 75 | 89 | 93 | 13.92 | 17.39 |
| N. J. | 17.6 | 17.2 | 17.5 | 16.2 | 16.3 | 18.0 | 16.4 | 17.5 | 18.0 | 18.5 | 20.0 | 79 | 83 | 79 | 80 | 82 | 92 | 14.17 | 18.40 |
| Pa. | 16.9 | 17.4 | 16.7 | 16.5 | 15.3 | 17.0 | 15.1 | 17.5 | 17.5 | 18.0 | 18.0 | 77 | 80 | 77 | 74 | 83 | 84 | 13.17 | 15.12 |
| Del. | 15.2 | 15.0 | 16.5 | 15.5 | 14.0 | 15.5 | 15.0 | 14.0 | 14.0 | 17.5 | 15.5 | 82 | 95 | 81 | 79 | 92 | 99 | 12.69 | 15.34 |
| Md. | 15.4 | 14.7 | 16.0 | 15.0 | 14.1 | 16.1 | 14.5 | 15.5 | 14.4 | 17.0 | 16.5 | 78 | 86 | 80 | 76 | 86 | 88 | 12.50 | 14.52 |
| Va. | 13.0 | 13.4 | 14.0 | 12.5 | 12.3 | 13.5 | 11.5 | 12.5 | 12.3 | 13.0 | 14.5 | 83 | 89 | 85 | 81 | 90 | 93 | 10.66 | 13.48 |
| W. Va. | 13.0 | 12.2 | 12.0 | 13.0 | 13.5 | 12.9 | 11.0 | 13.0 | 13.5 | 14.5 | 14.0 | 86 | 90 | 84 | 87 | 90 | 93 | 11.44 | 13.02 |
| N. C. | 10.1 | 11.0 | 10.5 | 8.9 | 9.4 | 10.0 | 10.0 | 9.3 | 10.3 | 10.0 | 11.5 | 100 | 100 | 105 | 98 | 105 | 105 | 10.09 | 12.08 |
| S. C. | 9.9 | 8.5 | 10.0 | 9.6 | 9.8 | 10.0 | 10.0 | 9.5 | 10.5 | 11.5 | 10.0 | 142 | 145 | 145 | 150 | 150 | 151 | 15.18 | 15.10 |
| Ga. | 9.2 | 8.3 | 9.0 | 8.7 | 9.0 | 10.4 | 9.5 | 9.2 | 9.5 | 9.3 | 9.2 | 135 | 138 | 140 | 135 | 150 | 140 | 13.46 | 12.88 |
| Ohio. | 16.9 | 19.5 | 17.2 | 16.5 | 17.2 | 16.5 | 15.5 | 15.5 | 16.5 | 17.0 | 17.5 | 75 | 85 | 75 | 69 | 81 | 83 | 12.37 | 14.52 |
| Ind. | 15.7 | 17.0 | 17.0 | 15.0 | 16.5 | 15.8 | 13.7 | 14.5 | 15.2 | 16.3 | 16.0 | 72 | 80 | 68 | 62 | 85 | 82 | 10.97 | 13.12 |
| Ill. | 17.2 | 17.0 | 18.5 | 17.1 | 17.8 | 17.4 | 16.8 | 16.0 | 16.5 | 16.0 | 18.5 | 73 | 81 | 70 | 65 | 85 | 83 | 12.30 | 15.36 |
| Mich. | 14.9 | 14.5 | 14.5 | 15.5 | 15.5 | 15.3 | 14.6 | 13.3 | 14.3 | 16.0 | 15.5 | 73 | 85 | 65 | 62 | 91 | 85 | 10.98 | 13.18 |
| Wis. | 17.4 | 17.0 | 18.0 | 19.0 | 16.3 | 16.0 | 17.0 | 18.3 | 17.5 | 16.5 | 18.5 | 72 | 84 | 61 | 57 | 91 | 87 | 12.36 | 16.10 |
| Minn. | 19.1 | 19.3 | 18.5 | 18.5 | 19.0 | 17.0 | 18.7 | 23.0 | 19.0 | 18.8 | 19.5 | 65 | 78 | 50 | 48 | 89 | 81 | 12.56 | 15.80 |
| Iowa. | 18.5 | 18.6 | 17.8 | 20.0 | 17.8 | 18.5 | 18.0 | 19.0 | 18.2 | 19.0 | 18.5 | 66 | 77 | 62 | 60 | 77 | 80 | 12.61 | 14.80 |
| Mo. | 14.5 | 15.8 | 15.4 | 12.8 | 15.0 | 15.0 | 14.1 | 14.8 | 15.0 | 14.0 | 13.5 | 78 | 84 | 80 | 75 | 87 | 86 | 11.67 | 11.61 |
| N. Dak. | 16.1 | 18.7 | 16.0 | 18.0 | 18.4 | 8.5 | 16.6 | 18.0 | 14.4 | 17.1 | 15.0 | 62 | 76 | 47 | 45 | 84 | 79 | 9.46 | 11.85 |
| S. Dak. | 16.7 | 18.8 | 17.0 | 17.5 | 17.5 | 17.0 | 10.0 | 19.5 | 13.2 | 17.0 | 19.5 | 62 | 76 | 52 | 50 | 78 | 76 | 9.59 | 14.82 |
| Nebr. | 16.4 | 21.0 | 17.0 | 16.0 | 16.5 | 16.0 | 13.0 | 16.0 | 14.5 | 16.0 | 17.5 | 62 | 75 | 56 | 60 | 74 | 73 | 9.77 | 12.78 |
| Kans. | 14.6 | 16.0 | 12.0 | 13.3 | 14.2 | 14.0 | 11.0 | 15.9 | 14.0 | 20.0 | 16.0 | 72 | 81 | 68 | 75 | 80 | 76 | 11.29 | 12.16 |
| Ky. | 13.1 | 15.2 | 13.7 | 13.5 | 12.7 | 13.0 | 12.0 | 13.0 | 12.4 | 13.7 | 12.0 | 87 | 94 | 88 | 87 | 95 | 94 | 11.52 | 11.28 |
| Tenn. | 11.6 | 13.0 | 10.0 | 12.5 | 10.7 | 11.0 | 11.9 | 11.5 | 12.0 | 13.0 | 10.5 | 94 | 99 | 98 | 99 | 98 | 103 | 11.56 | 10.82 |
| Ala. | 11.2 | 12.5 | 10.5 | 10.0 | 11.3 | 12.0 | 10.0 | 11.5 | 11.0 | 13.0 | 10.0 | 125 | 125 | 134 | 140 | 110 | 135 | 14.40 | 13.50 |
| Tex. | 13.6 | 14.6 | 10.0 | 15.5 | 11.2 | 11.5 | 10.0 | 16.6 | 15.0 | 14.8 | 17.0 | 103 | 107 | 110 | 101 | 99 | 103 | 14.12 | 17.51 |
| Okla. | 12.5 | 13.9 | 10.0 | 13.5 | 13.5 | 13.7 | 9.5 | 12.0 | 9.5 | 16.0 | 13.5 | 83 | 104 | 87 | 86 | 95 | 77 | 10.96 | 10.40 |
| Ark. | 10.7 | 12.0 | 9.9 | 10.0 | 10.5 | 12.0 | 10.0 | 10.5 | 11.5 | 10.5 | 10.5 | 96 | 90 | 105 | 95 | 105 | 100 | 10.74 | 10.50 |
| Mont. | 22.2 | 20.5 | 22.0 | 20.0 | 29.0 | 20.0 | 23.0 | 23.5 | 21.0 | 21.0 | 22.5 | 67 | 72 | 60 | 55 | 70 | 65 | 14.10 | 14.62 |
| Wyo. | 20.2 | 19.0 | 21.5 | 22.0 | 26.0 | 18.5 | 20.0 | 19.0 | 19.0 | 17.0 | 20.0 | 77 | 90 | 65 | 64 | 81 | 90 | 14.25 | 18.00 |
| Colo. | 17.6 | 20.0 | 20.5 | 15.5 | 22.0 | 14.0 | 12.0 | 19.5 | 17.0 | 17.5 | 17.5 | 65 | 70 | 55 | 60 | 65 | 70 | 10.02 | 12.25 |
| Utah. | 18.0 | 24.0 | 20.0 | 15.5 | 22.0 | 18.5 | 15.5 | 15.0 | 17.0 | 17.5 | 15.5 | 66 | 70 | 68 | 60 | 60 | 65 | 10.87 | 10.08 |
| Idaho. | 21.8 | 25.2 | 24.7 | 20.0 | 21.5 | 20.0 | 22.5 | 22.0 | 22.0 | 20.0 | 20.0 | 65 | 67 | 60 | 58 | 67 | 68 | 13.53 | 13.60 |
| Wash. | 20.3 | 19.6 | 21.5 | 19.5 | 21.0 | 20.5 | 22.0 | 20.0 | 21.0 | 19.7 | 18.2 | 78 | 80 | 65 | 60 | 85 | 75 | 15.64 | 13.65 |
| Oreg. | 17.0 | 17.2 | 16.0 | 18.0 | 17.0 | 15.1 | 19.5 | 16.0 | 17.5 | 16.0 | 18.0 | 87 | 90 | 70 | 75 | 100 | 90 | 14.59 | 16.20 |
| Cal. | 15.5 | 12.8 | 19.0 | 12.0 | 13.8 | 17.0 | 17.0 | 17.6 | 15.0 | 17.0 | 14.0 | 86 | 85 | 90 | 75 | 85 | 90 | 14.12 | 12.60 |
| U. S. | 16.4 | 16.7 | 16.4 | 16.4 | 16.1 | 16.0 | 15.6 | 16.8 | 16.2 | 16.8 | 17.2 | 73.4 | 83.2 | 60.3 | 63.4 | 86.5 | 83.9 | 12.07 | 14.46 |

[1] Based upon farm price Dec. 1.

## RYE—Continued.

TABLE 54.—*Rye: Farm price per bushel on first of each month, by geographical divisions, 1914 and 1915.*

| Month. | United States. | | North Atlantic States. | | South Atlantic States. | | N. Central States east of Miss. R. | | N. Central States west of Miss. R. | | South Central States. | | Far Western States. | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1915 | 1914 | 1915 | 1914 | 1915 | 1914 | 1915 | 1914 | 1915 | 1914 | 1915 | 1914 | 1915 | 1914 |
| | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* |
| January | 90.2 | 62.5 | 88.9 | 74.9 | 92.7 | 85.3 | 93.5 | 59.8 | 87.7 | 51.9 | 97.1 | 88.0 | 76.1 | 67.0 |
| February | 100.6 | 61.7 | 96.8 | 74.7 | 96.0 | 85.1 | 105.7 | 57.8 | 99.3 | 51.9 | 101.7 | 86.8 | 84.7 | 68.0 |
| March | 105.4 | 61.9 | 106.7 | 73.1 | 102.5 | 85.4 | 108.3 | 58.6 | 102.8 | 51.9 | 108.6 | 95.7 | 89.6 | 69.8 |
| April | 100.4 | 63.0 | 101.3 | 75.0 | 95.4 | 87.5 | 101.9 | 58.9 | 99.2 | 53.5 | 105.4 | 91.5 | 93.9 | 70.2 |
| May | 101.9 | 62.9 | 102.6 | 75.7 | 95.4 | 86.4 | 103.0 | 59.8 | 101.0 | 51.7 | 103.1 | 85.7 | 100.9 | 72.0 |
| June | 98.1 | 64.4 | 99.5 | 75.8 | 98.1 | 86.9 | 98.6 | 60.4 | 96.6 | 55.6 | 100.9 | 85.0 | 95.2 | 73.2 |
| July | 93.7 | 63.1 | 95.1 | 75.1 | 95.3 | 87.8 | 93.3 | 60.4 | 94.6 | 52.2 | 92.4 | 76.0 | 82.1 | 67.1 |
| August | 89.0 | 61.0 | 92.8 | 71.9 | 92.5 | 83.6 | 88.5 | 57.3 | 87.0 | 51.1 | 94.9 | 78.8 | 81.4 | 78.9 |
| September | 85.5 | 75.4 | 87.9 | 80.0 | 92.2 | 89.6 | 85.5 | 74.6 | 83.2 | 70.7 | 90.1 | 86.0 | 78.5 | 69.3 |
| October | 81.7 | 79.0 | 86.0 | 82.1 | 90.4 | 90.3 | 83.0 | 78.9 | 76.0 | 74.6 | 94.3 | 92.8 | 71.4 | 75.1 |
| November | 85.7 | 80.1 | 86.5 | 84.5 | 95.1 | 90.2 | 86.8 | 80.1 | 83.2 | 75.4 | 98.7 | 96.2 | 71.4 | 73.4 |
| December | 83.9 | 86.5 | 88.3 | 84.7 | 98.2 | 97.1 | 85.2 | 89.2 | 78.2 | 83.2 | 97.7 | 96.9 | 76.8 | 77.0 |
| Average | 90.1 | 71.6 | 91.8 | 78.8 | 94.3 | 88.3 | 91.1 | 70.0 | 85.6 | 67.3 | 96.8 | 88.1 | 79.8 | 72.0 |

TABLE 55.—*Rye: Wholesale price per bushel, 1900–1915.*

| Date. | Philadelphia. | | Cincinnati. | | Chicago. | | Duluth. | | San Francisco (per 100 lbs.). | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | No. 2. | | No. 2. | | | | | |
| | Low. | High. | Low. | High. | Low. | High. | Low. | High. | Low. | High. |
| | *Cents.* | *Cents.* | *Cents.* | *Cents.* | *Cents.* | *Cents.* | *Cents.* | *Cents.* | *Dolls.* | *Dolls.* |
| 1900 | ...... | ...... | 51½ | 67 | 44½ | 60½ | 46 | 60½ | ...... | ...... |
| 1901 | 58 | 71½ | 45 | 73 | 46¾ | 65¾ | 46½ | 62½ | 0.75 | 0.87½ |
| 1902 | 54 | 71 | 51 | 71½ | 48 | 67½ | 46 | 64 | .77½ | 1.15 |
| 1903 | 56 | 68½ | 54 | 63 | 48 | 60 | 48 | 55¼ | 1.10 | 1.30 |
| 1904 | 65 | 96 | 61 | 87 | 51 | 81 | 54½ | 80 | 1.25 | 1.47½ |
| 1905 | 63 | 90¼ | 56 | 87 | 57½ | 84 | 55½ | 78 | 1.40 | 1.75 |
| 1906 | 55½ | 67 | 58 | 72½ | 55½ | 68 | 53 | 61 | ...... | ...... |
| 1907 | 75 | 100 | 68 | 93 | 60 | 91¼ | 57 | 86 | 1.35 | 1.52½ |
| 1908 | 80 | 95 | 78 | 89 | 72 | 87 | 60 | 80 | 1.35 | 1.52½ |
| 1909 | 75 | 95 | 70 | 92 | 67 | 91 | 62 | 88 | 1.55 | 2.05 |
| 1910 | 75 | 92 | 73 | 87 | 72 | 82 | 67 | 78½ | 1.50 | 2.00 |
| 1911 | 78 | 107 | 79 | 101 | 80 | 113 | 72 | 100 | 1.40 | 1.60 |
| 1912 | 68 | 105 | 62 | 100 | 58 | 96½ | 53 | 91½ | 1.40 | 1.72½ |
| 1913 | 65 | 77 | 60 | 72 | 58 | 70½ | 50 | 65 | 1.32½ | 1.65 |
| 1914 | 65 | 125 | 60 | 115 | 55 | 112½ | 50 | 107 | 1.30 | 1.65 |
| **1915.** | | | | | | | | | | |
| January | 115 | 125 | 113½ | 130 | 111½ | 126½ | 106 | 123½ | 1.60 | 2.25 |
| February | 125 | 130 | 118 | 133 | 115 | 131 | 113 | 128 | 2.00 | 2.25 |
| March | 125 | 130 | 108 | 120 | 112 | 121 | 106 | 119 | 2.00 | 2.25 |
| April | 110 | 120 | 110 | 116 | 115½ | 118 | 106 | 116 | 2.00 | 2.25 |
| May | 110 | 115 | 112 | 120 | 115 | 122 | 110 | 118 | 2.00 | 2.25 |
| June | 105 | 110 | 107 | 113 | 114 | 119 | 110 | 114 | (1) | (1) |
| July | 92 | 99 | 98 | 112 | 96 | 119 | 95 | 111 | (1) | (1) |
| August | 90 | 95 | 98 | 105 | 96 | 119 | 91 | 107 | 1.55 | 1.65 |
| September | 91 | 105 | 92 | 102 | 91 | 100½ | 89 | 96 | 1.45 | 1.60 |
| October | 95 | 112 | 98 | 107 | 95 | 107 | 90 | 99 | 1.45 | 1.60 |
| November | 100 | 110 | 98 | 107 | 94 | 103 | 87 | 96 | 1.55 | 1.60 |
| December | 105 | 112 | 95 | 104 | 94½ | 98½ | 87 | 93 | 1.55 | 1.60 |
| Year | 90 | 130 | 92 | 133 | 91 | 131 | 89 | 128 | 1.45 | 2.25 |

[1] Nominal.

## RYE—Continued.

**Table 56.**—*Rye (including flour): International trade, calendar years 1912–1914.*

[See "General note," p. 417.]

EXPORTS.

[000 omitted.]

| Country. | 1912 | 1913 | 1914 (prelim.). | Country. | 1912 | 1913 | 1914 (prelim.). |
|---|---|---|---|---|---|---|---|
| | *Bushels.* | *Bushels.* | *Bushels.* | | *Bushels.* | *Bushels.* | *Bushels.* |
| Argentina | 445 | 861 | 451 | Roumania | 2,481 | [1] 2,481 | .......... |
| Belgium | 1,155 | 673 | .......... | Russia | 26,359 | 33,170 | 20,209 |
| Bulgaria | 2,029 | 2,029 | .......... | United States | 501 | 2,034 | 8,164 |
| Canada | 1 | 127 | 146 | Other countries | 582 | 480 | .......... |
| Denmark | 296 | 319 | 5 | | | | |
| Germany | 42,784 | 51,979 | .......... | Total | 93,056 | 114,444 | .......... |
| Netherlands | 16,423 | 20,291 | 7,357 | | | | |
| IMPORTS. | | | | | | | |
| Austria-Hungary | 1,336 | 268 | .......... | Norway | 9,168 | 11,088 | 8,014 |
| Belgium | 5,309 | 6,372 | .......... | Russia | 3,455 | 7,769 | 5,449 |
| Denmark | 8,170 | 9,846 | 5,082 | Sweden | 4,708 | 4,446 | 2,133 |
| Finland | 12,873 | 15,813 | .......... | Switzerland | 750 | 661 | 267 |
| France | 3,688 | 3,712 | 848 | United Kingdom | 1,965 | 2,276 | 2,073 |
| Germany | 12,501 | 13,946 | .......... | Other countries | 713 | 886 | .......... |
| Italy | 623 | 1,245 | 378 | | | | |
| Netherlands | 27,714 | 32,273 | 14,289 | Total | 92,973 | 110,601 | .......... |

[1] Year preceding.

## BUCKWHEAT.

**Table 57.**—*Buckwheat: Acreage, production, and value in the United States, 1849–1915.*

Note.—Figures in *italics* are census returns; figures in roman are estimates of the Department of Agriculture. Estimates of acres are obtained by applying estimated percentages of increase or decrease to the published numbers of the preceding year, except that a revised base is used for applying percentage estimates whenever new census data are available.

| Year. | Acreage (thousands of acres). | Average yield per acre (bushels). | Production (thousands of bushels). | Average farm price Dec. 1 (cents per bushel). | Farm value Dec. 1 (thousands of dollars). |
|---|---|---|---|---|---|
| *1849* | .......... | .......... | *8,957* | .......... | .......... |
| *1859* | .......... | .......... | *17,572* | .......... | .......... |
| 1866 | 1,046 | 21.8 | 22,792 | 67.6 | 15,413 |
| 1867 | 1,228 | 17.4 | 21,359 | 78.7 | 16,812 |
| 1868 | 1,114 | 17.8 | 19,864 | 78.0 | 15,490 |
| 1869 | 1,029 | 16.9 | 17,431 | 71.9 | 12,535 |
| *1869* | .......... | .......... | *9,822* | .......... | .......... |
| 1870 | 537 | 18.3 | 9,842 | 70.5 | 6,937 |
| 1871 | 414 | 20.1 | 8,329 | 74.5 | 6,208 |
| 1872 | 448 | 18.1 | 8,134 | 73.5 | 5,979 |
| 1873 | 454 | 17.3 | 7,838 | 75.0 | 5,879 |
| 1874 | 453 | 17.7 | 8,017 | 72.9 | 5,844 |
| 1875 | 576 | 17.5 | 10,082 | 62.0 | 6,255 |
| 1876 | 666 | 14.5 | 9,669 | 66.6 | 6,436 |
| 1877 | 650 | 15.7 | 10,177 | 66.9 | 6,808 |
| 1878 | 673 | 18.2 | 12,247 | 52.6 | 6,441 |
| 1879 | 640 | 20.5 | 13,140 | 59.8 | 7,856 |
| *1879* | *848* | *13.9* | *11,817* | .......... | .......... |
| 1880 | 823 | 17.8 | 14,618 | 59.4 | 8,682 |
| 1881 | 829 | 11.4 | 9,486 | 86.5 | 8,206 |
| 1882 | 847 | 13.0 | 11,019 | 73.0 | 8,039 |
| 1883 | 857 | 8.9 | 7,669 | 82.2 | 6,304 |
| 1884 | 879 | 12.6 | 11,116 | 58.9 | 6,549 |
| 1885 | 914 | 13.8 | 12,626 | 55.9 | 7,057 |
| 1886 | 918 | 12.9 | 11,869 | 54.5 | 6,465 |
| 1887 | 911 | 11.9 | 10,844 | 56.5 | 6,122 |
| 1888 | 913 | 13.2 | 12,050 | 63.3 | 7,628 |
| 1889 | 837 | 14.5 | 12,110 | 50.5 | 6,113 |
| *1889* | *837* | *14.5* | *12,110* | .......... | .......... |
| 1890 | 845 | 14.7 | 12,433 | 57.4 | 7,133 |
| 1891 | 849 | 15.0 | 12,761 | 57.0 | 7,272 |
| 1892 | 861 | 14.1 | 12,143 | 51.8 | 6,296 |
| 1893 | 816 | 14.9 | 12,132 | 58.3 | 7,074 |
| 1894 | 789 | 16.1 | 12,668 | 55.6 | 7,040 |
| 1895 | 763 | 20.1 | 15,341 | 45.2 | 6,936 |
| 1896 | 755 | 18.7 | 14,090 | 39.2 | 5,522 |
| 1897 | 718 | 20.9 | 14,997 | 42.1 | 6,319 |
| 1898 | 678 | 17.3 | 11,722 | 45.0 | 5,271 |
| 1899 | 670 | 16.6 | 11,094 | 55.7 | 6,184 |
| *1899* | *807* | *13.9* | *11,234* | .......... | .......... |
| 1900 | 638 | 15.0 | 9,567 | 55.8 | 5,341 |
| 1901 | 811 | 18.6 | 15,126 | 56.3 | 8,523 |
| 1902 | 805 | 18.1 | 14,530 | 59.6 | 8,655 |
| 1903 | 804 | 17.7 | 14,244 | 60.7 | 8,651 |
| 1904 | 794 | 18.9 | 15,008 | 62.2 | 9,331 |
| 1905 | 760 | 19.2 | 14,585 | 58.7 | 8,565 |
| 1906 | 789 | 18.6 | 14,642 | 59.6 | 8,727 |
| 1907 | 800 | 17.9 | 14,290 | 69.8 | 9,975 |
| 1908 | 803 | 19.8 | 15,874 | 75.6 | 12,004 |
| 1909 | 834 | 20.9 | 17,438 | .......... | .......... |
| *1909* | *878* | *16.9* | *14,849* | 70.1 | 10,346 |
| 1910 [1] | 860 | 20.5 | 17,598 | 66.1 | 11,636 |
| 1911 | 833 | 21.1 | 17,549 | 72.6 | 12,735 |
| 1912 | 841 | 22.9 | 19,249 | 66.1 | 12,720 |
| 1913 | 805 | 17.2 | 13,833 | 75.5 | 10,445 |
| 1914 | 792 | 21.3 | 16,881 | 76.4 | 12,892 |
| 1915 | 806 | 19.6 | 15,769 | 78.7 | 12,408 |

[1] Figures adjusted to census basis.

## BUCKWHEAT—Continued.

### TABLE 58.—*Buckwheat: Acreage, production, and total farm value, by States, 1915.*

[000 omitted.]

| State. | Acreage. | Production. | Farm value Dec. 1. | State. | Acreage | Production. | Farm value Dec. 1. |
|---|---|---|---|---|---|---|---|
| | *Acres.* | *Bush.* | *Dolls.* | | *Acres.* | *Bush.* | *Dolls.* |
| Maine | 13 | 338 | 237 | Ohio | 18 | 414 | 319 |
| New Hampshire | 1 | 30 | 24 | Indiana | 5 | 70 | 56 |
| Vermont | 8 | 216 | 177 | Illinois | 4 | 68 | 61 |
| Massachusetts | 2 | 32 | 30 | Michigan | 60 | 870 | 626 |
| Connecticut | 3 | 60 | 58 | Wisconsin | 18 | 234 | 194 |
| New York | 280 | 5,320 | 4,256 | Minnesota | 7 | 122 | 92 |
| New Jersey | 10 | 210 | 174 | Iowa | 7 | 91 | 73 |
| Pennsylvania | 274 | 5,754 | 4,488 | Missouri | 3 | 45 | 40 |
| Delaware | 3 | 56 | 42 | Nebraska | 1 | 20 | 19 |
| | | | | Kansas | 1 | 14 | 14 |
| Maryland | 11 | 220 | 158 | Tennessee | 3 | 54 | 41 |
| Virginia | 26 | 520 | 416 | | | | |
| West Virginia | 38 | 836 | 669 | United States | 806 | 15,769 | 12,408 |
| North Carolina | 10 | 175 | 144 | | | | |

### TABLE 59.—*Buckwheat: Condition of crop, United States, on first of months named, 1895–1915.*

| Year. | Aug. | Sept. | When harvested. | Year. | Aug. | Sept. | When harvested. | Year. | Aug. | Sept. | When harvested. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | *P. ct.* | *P. ct.* | *P. ct.* | | *P. ct.* | *P. ct.* | *P. ct.* | | *P. ct.* | *P. ct.* | *P. ct.* |
| 1895 | 85.2 | 87.5 | 84.8 | 1902 | 91.4 | 86.4 | 80.5 | 1909 | 86.4 | 81.0 | 79.5 |
| 1896 | 96.0 | 93.2 | 86.0 | 1903 | 93.9 | 91.0 | 83.0 | 1910 | 87.9 | 82.3 | 81.7 |
| 1897 | 94.9 | 95.1 | 90.8 | 1904 | 92.8 | 91.5 | 88.7 | 1911 | 82.9 | 83.8 | 81.4 |
| 1898 | 87.2 | 88.8 | 76.2 | 1905 | 92.6 | 91.8 | 91.6 | 1912 | 88.1 | 91.6 | 89.2 |
| 1899 | 93.2 | 75.2 | 70.2 | 1906 | 93.2 | 91.2 | 84.9 | 1913 | 85.5 | 75.4 | 65.9 |
| 1900 | 87.9 | 80.5 | 72.8 | 1907 | 91.9 | 77.4 | 80.1 | 1914 | 88.8 | 87.1 | 83.3 |
| 1901 | 91.1 | 90.9 | 90.5 | 1908 | 89.4 | 87.8 | 81.6 | 1915 | 92.6 | 88.6 | 81.9 |

## BUCKWHEAT—Continued.

**Table 60.**—*Buckwheat: Yield per acre, price per bushel Dec. 1, and value per acre, by States.*

| State. | Yield per acre (bushels). | | | | | | | | | | | Farm price per bushel (cents). | | | | | | Value per acre (dollars).[1] | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 10-year average, 1906-1915. | 1906 | 1907 | 1908 | 1909 | 1910 | 1911 | 1912 | 1913 | 1914 | 1915 | 10-year average, 1906-1915. | 1911 | 1912 | 1913 | 1914 | 1915 | 5-year average, 1910-1914. | 1915 |
| Me. | 29.3 | 28.0 | 28.0 | 30.0 | 28.0 | 32.5 | 30.0 | 29.4 | 32.0 | 29.0 | 26.0 | 66 | 70 | 70 | 56 | 60 | 70 | 19.80 | 18.20 |
| N.H. | 26.3 | 22.0 | 22.0 | 21.5 | 22.0 | 31.0 | 27.3 | 31.0 | 31.0 | 25.0 | 30.0 | 74 | 81 | 72 | 66 | 70 | 81 | 20.32 | 24.30 |
| Vt. | 24.5 | 21.0 | 22.0 | 22.0 | 22.0 | 24.0 | 24.3 | 30.0 | 25.0 | 28.0 | 27.0 | 74 | 85 | 72 | 80 | 82 | 82 | 20.40 | 22.14 |
| Mass. | 19.4 | 20.0 | 21.0 | 18.0 | 19.8 | 22.0 | 21.0 | 21.0 | 17.0 | 18.5 | 16.0 | 81 | 89 | 85 | 80 | 84 | 95 | 16.88 | 15.20 |
| Conn. | 18.5 | 17.0 | 16.0 | 18.2 | 19.5 | 19.5 | 19.0 | 20.5 | 17.0 | 18.5 | 20.0 | 88 | 95 | 88 | 95 | 95 | 96 | 17.20 | 19.20 |
| N.Y. | 20.6 | 19.0 | 17.5 | 21.4 | 24.0 | 23.0 | 21.3 | 23.8 | 14.3 | 23.0 | 19.0 | 72 | 73 | 64 | 81 | 76 | 80 | 14.96 | 15.20 |
| N.J. | 20.4 | 18.0 | 16.5 | 20.0 | 21.8 | 21.5 | 20.0 | 22.0 | 22.0 | 21.0 | 21.0 | 74 | 75 | 72 | 76 | 83 | 83 | 15.97 | 17.43 |
| Pa. | 20.1 | 19.0 | 18.0 | 19.2 | 19.5 | 19.5 | 21.9 | 24.2 | 18.5 | 20.5 | 21.0 | 69 | 69 | 64 | 73 | 76 | 78 | 14.35 | 16.38 |
| Del. | 20.1 | 17.0 | 24.0 | 30.0 | 19.8 | 20.5 | 19.0 | 16.0 | 17.0 | 19.0 | 18.5 | 68 | 65 | 66 | 69 | 76 | 75 | 12.48 | 13.88 |
| Md. | 18.3 | 18.0 | 19.0 | 18.5 | 16.6 | 18.5 | 20.0 | 17.5 | 16.5 | 18.5 | 20.0 | 71 | 67 | 71 | 75 | 81 | 72 | 13.48 | 14.40 |
| Va. | 19.2 | 19.0 | 19.0 | 18.0 | 18.0 | 18.0 | 16.0 | 21.5 | 23.1 | 19.4 | 20.0 | 74 | 70 | 75 | 80 | 84 | 80 | 15.19 | 16.00 |
| W. Va. | 21.3 | 18.0 | 18.5 | 18.0 | 22.7 | 23.0 | 24.0 | 24.0 | 21.0 | 21.5 | 22.0 | 78 | 85 | 75 | 78 | 83 | 80 | 18.07 | 17.60 |
| N.C. | 17.7 | 14.0 | 15.5 | 16.4 | 19.8 | 19.0 | 19.0 | 17.5 | 19.3 | 19.0 | 17.5 | 78 | 80 | 85 | 78 | 83 | 82 | 15.22 | 14.35 |
| Ohio | 20.2 | 19.0 | 19.5 | 18.5 | 21.2 | 18.0 | 21.0 | 19.5 | 18.0 | 24.0 | 23.0 | 74 | 78 | 70 | 76 | 76 | 77 | 15.09 | 17.71 |
| Ind. | 17.1 | 16.0 | 15.5 | 17.0 | 17.3 | 17.7 | 18.3 | 19.0 | 18.5 | 17.5 | 14.0 | 74 | 74 | 73 | 75 | 78 | 80 | 13.47 | 11.20 |
| Ill. | 18.4 | 19.0 | 17.0 | 18.2 | 18.2 | 20.0 | 18.1 | 22.0 | 17.0 | 17.7 | 17.0 | 86 | 95 | 80 | 80 | 95 | 90 | 16.64 | 15.30 |
| Mich. | 15.5 | 13.0 | 15.5 | 13.5 | 14.3 | 15.3 | 18.0 | 17.0 | 15.0 | 18.5 | 14.5 | 67 | 71 | 65 | 70 | 71 | 72 | 11.39 | 10.44 |
| Wis. | 15.4 | 15.0 | 16.0 | 15.2 | 12.3 | 14.0 | 17.5 | 17.0 | 16.5 | 17.5 | 13.0 | 73 | 75 | 66 | 69 | 76 | 83 | 11.90 | 10.79 |
| Minn. | 16.8 | 14.0 | 14.7 | 18.2 | 15.2 | 16.0 | 18.0 | 21.0 | 16.5 | 17.0 | 17.5 | 69 | 76 | 65 | 64 | 70 | 75 | 12.26 | 13.12 |
| Iowa | 15.4 | 12.0 | 15.0 | 15.5 | 15.0 | 14.9 | 17.5 | 19.0 | 14.0 | 18.3 | 13.0 | 80 | 90 | 75 | 81 | 77 | 80 | 13.56 | 10.40 |
| Mo. | 15.8 | 18.0 | 16.0 | 20.1 | 21.0 | 16.5 | 10.0 | 15.0 | 11.0 | 15.5 | 15.0 | 89 | 105 | 95 | 85 | 93 | 90 | 12.58 | 13.50 |
| Nebr. | 17.6 | 15.0 | 14.5 | 18.0 | 16.0 | 20.0 | 16.0 | 18.0 | 20.0 | 18.5 | 20.0 | 86 | 95 | 90 | 79 | 84 | 95 | 16.15 | 19.00 |
| Kans. | 14.5 | 17.0 | 12.0 | 18.7 | 14.0 | 15.0 | 12.0 | 16.0 | 10.0 | 16.0 | 14.0 | 88 | 98 | 78 | 80 | 90 | 99 | 12.03 | 13.86 |
| Tenn. | 16.6 | 16.0 | 15.0 | 15.3 | 15.0 | 15.0 | 16.0 | 18.0 | 15.0 | 22.3 | 18.0 | 79 | 79 | 78 | 75 | 78 | 76 | 13.64 | 13.68 |
| U. S. | 20.0 | 18.6 | 17.9 | 19.8 | 20.9 | 20.5 | 21.1 | 22.9 | 17.2 | 21.3 | 19.6 | 71.0 | 72.6 | 66.1 | 75.5 | 76.4 | 78.7 | 14.64 | 15.39 |

[1] Based upon farm price Dec. 1.

**Table 61.**—*Buckwheat: Farm price per bushel on first of each month, by geographical divisions, 1914 and 1915.*

| Month. | United States. | | North Atlantic States. | | South Atlantic States. | | N. Central States east of Miss. R. | | N. Central States west of Miss. R. | | South Central States. | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1915 | 1914 | 1915 | 1914 | 1915 | 1914 | 1915 | 1914 | 1915 | 1914 | 1915 | 1914 |
| | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* |
| January | 77.9 | 76.6 | 77.6 | 76.1 | 81.2 | 80.0 | 76.5 | 75.5 | 87.5 | 78.5 | 74.0 | 75.0 |
| February | 83.7 | 75.6 | 84.0 | 74.4 | 85.0 | 83.4 | 80.8 | 75.1 | 79.0 | 71.0 | 76.0 | 80.0 |
| March | 85.5 | 75.1 | 87.0 | 74.5 | 85.1 | 80.3 | 77.0 | 73.4 | 82.5 | 73.0 | 80.0 | 75.0 |
| April | 85.3 | 76.9 | 84.8 | 76.4 | 89.2 | 83.8 | 85.1 | 73.7 | 90.0 | 73.0 | 78.0 | 73.0 |
| May | 84.6 | 77.3 | 84.7 | 77.7 | 89.0 | 80.0 | 79.6 | 72.5 | 90.5 | 71.5 | 77.0 | 75.0 |
| June | 86.9 | 79.0 | 87.6 | 79.0 | 86.7 | 84.5 | 82.7 | 78.4 | 91.0 | 74.5 | 76.0 | 80.0 |
| July | 92.1 | 85.5 | 93.3 | 87.4 | 87.1 | 82.2 | 86.2 | 77.2 | 117.5 | 82.5 | 77.0 | 75.0 |
| August | 89.2 | 81.2 | 91.3 | 81.4 | 83.2 | 82.7 | 78.9 | 78.5 | 102.0 | 77.0 | 77.0 | ...... |
| September | 81.4 | 79.8 | 81.6 | 79.4 | 82.0 | 83.0 | 78.3 | 77.8 | 97.5 | 85.0 | 75.0 | 75.0 |
| October | 73.7 | 78.7 | 73.9 | 79.5 | 77.0 | 82.3 | 68.0 | 69.4 | 88.0 | 84.0 | 70.0 | 75.0 |
| November | 78.5 | 78.0 | 79.0 | 77.8 | 75.2 | 78.8 | 76.3 | 78.2 | 97.5 | 79.5 | 71.0 | 75.0 |
| December | 78.7 | 76.4 | 79.0 | 75.9 | 79.1 | 82.7 | 75.8 | 74.0 | 81.5 | 77.3 | 76.0 | 78.0 |

## POTATOES.

**Table 62.**—*Potatoes: Area and production of undermentioned countries, 1912–1914.*

| Country. | Area. | | | Production. | | |
|---|---|---|---|---|---|---|
| | 1912 | 1913 | 1914 | 1912 | 1913 | 1914 |
| NORTH AMERICA. | *Acres.* | *Acres.* | *Acres.* | *Bushels.* | *Bushels.* | *Bushels.* |
| United States | 3,711,000 | 3,668,000 | 3,711,000 | 420,647,000 | 331,525,000 | 409,921,000 |
| Canada: | | | | | | |
| Prince Edward Island | 33,000 | 32,000 | 32,000 | 6,741,000 | 6,219,000 | 6,806,000 |
| Nova Scotia | 32,000 | 32,000 | 32,000 | 9,447,000 | 5,369,000 | 7,165,000 |
| New Brunswick | 43,000 | 44,000 | 44,000 | 7,558,000 | 10,629,000 | 10,534,000 |
| Quebec | 116,000 | 116,000 | 115,000 | 15,945,000 | 20,504,000 | 21,811,000 |
| Ontario | 158,000 | 152,000 | 154,000 | 22,690,000 | 18,105,000 | 25,772,000 |
| Manitoba | 27,000 | 26,000 | 27,000 | 6,182,000 | 5,120,000 | 3,172,000 |
| Saskatchewan | 31,000 | 31,000 | 31,000 | 6,552,000 | 5,138,000 | 4,085,000 |
| Alberta | 27,000 | 26,000 | 26,000 | 5,775,000 | 4,350,000 | 3,652,000 |
| British Columbia | 17,000 | 15,000 | 15,000 | 3,995,000 | 3,110,000 | 2,675,000 |
| Total Canada | 484,000 | 474,000 | 476,000 | 84,885,000 | 78,544,000 | 85,672,000 |
| Newfoundland | (1) | (1) | (1) | 1,524,000 | 1,524,000 | (1) |
| Total | ........ | ........ | ........ | 507,056,000 | 411,593,000 | ........ |
| SOUTH AMERICA. | | | | | | |
| Argentina | 267,000 | 278,000 | 293,000 | 36,743,000 | 38,029,000 | (1) |
| Chile | 66,000 | 78,000 | 81,000 | 9,656,000 | 8,753,000 | 9,169,000 |
| Total | 333,000 | 356,000 | 374,000 | 46,399,000 | 46,782,000 | ........ |
| EUROPE. | | | | | | |
| Austria-Hungary: | | | | | | |
| Austria | 3,092,000 | 3,152,000 | (1) | 460,821,000 | 424,457,000 | (1) |
| Hungary proper | 1,530,000 | 1,513,000 | 1,513,000 | 197,812,000 | 179,133,000 | 195,266,000 |
| Croatia-Slavonia | 195,000 | 194,000 | (1) | 21,674,000 | 21,140,000 | (1) |
| Bosnia-Herzegovina | 62,000 | 67,000 | (1) | 3,472,000 | 2,998,000 | (1) |
| Total Austria-Hungary | 4,879,000 | 4,926,000 | ........ | 683,779,000 | 627,728,000 | ........ |
| Belgium | 387,000 | 395,000 | 411,000 | 121,481,000 | 117,613,000 | (1) |
| Bulgaria | 8,000 | (1) | (1) | 503,000 | (1) | (1) |
| Denmark | 151,000 | (1) | (1) | 32,629,000 | 42,231,000 | 37,335,000 |
| Finland | (1) | (1) | (1) | 23,488,000 | 23,424,000 | (1) |
| France | 3,863,000 | 3,825,000 | 3,676,000 | 552,074,000 | 499,194,000 | 440,652,000 |
| Germany | 8,257,000 | 8,432,000 | 8,367,000 | 1,844,863,000 | 1,988,591,000 | 1,674,377,000 |
| Italy | 514,000 | 722,000 | 727,000 | 56,313,000 | 65,741,000 | 61,104,000 |
| Luxemburg | 37,000 | 37,000 | 37,000 | 8,683,000 | 7,637,000 | 5,288,000 |
| Malta | 4,000 | (1) | (1) | 750,000 | (1) | (1) |
| Netherlands | 426,000 | 420,000 | 416,000 | 121,878,000 | 109,260,000 | 120,780,000 |
| Norway | [2] 104,000 | (1) | (1) | [2] 29,825,000 | 27,780,000 | 27,548,000 |
| Roumania | [3] 30,000 | [3] 25,000 | [3] 26,000 | [3] 3,748,000 | [3] 2,523,000 | [3] 2,654,000 |
| Do | [4] 60,000 | [4] 60,000 | [4] 56,000 | [4] 1,084,000 | [4] 1,066,000 | [4] 1,083,000 |
| Russia, European: | | | | | | |
| Russia proper | 8,321,000 | 8,664,000 | 8,795,000 | 925,775,000 | 869,240,000 | 891,573,000 |
| Poland | 2,656,000 | 2,662,000 | 2,438,000 | 411,281,000 | 383,736,000 | (1) |
| Northern Caucasia | 190,000 | 194,000 | 206,000 | 19,768,000 | 16,720,000 | 17,996,000 |
| Total Russia, European | 11,167,000 | 11,520,000 | 11,439,000 | 1,356,824,000 | 1,269,696,000 | ........ |
| Serbia | 31,000 | (1) | (1) | 2,173,000 | (1) | (1) |
| Spain | 632,000 | (1) | 688,000 | 93,089,000 | (1) | 76,657,000 |
| Sweden | 378,000 | 383,000 | 376,000 | 56,202,000 | 75,367,000 | 63,209,000 |
| Switzerland | 210,000 | 137,000 | 137,000 | 40,785,000 | 31,783,000 | 22,046,000 |
| United Kingdom: | | | | | | |
| England | 437,000 | 417,000 | 436,000 | 78,961,000 | 102,834,000 | 104,804,000 |
| Scotland | 150,000 | 149,000 | 152,000 | 35,041,000 | 36,243,000 | 40,230,000 |
| Wales | 26,000 | 25,000 | 26,000 | 4,704,000 | 5,233,000 | 5,445,000 |
| Ireland | 595,000 | 582,000 | 583,000 | 95,077,000 | 139,602,000 | 128,642,000 |
| Total United Kingdom | 1,208,000 | 1,173,000 | 1,197,000 | 213,783,000 | 283,912,000 | 279,121,000 |
| Total | ........ | ........ | ........ | 5,243,954,000 | ........ | ........ |

[1] No official statistics. [2] Year 1910 (census). [3] Grown alone. [4] Grown with corn.

## POTATOES—Continued.

**Table 62.**—*Potatoes: Area and production of undermentioned countries, 1912–1914*—Continued.

| Country. | Area. | | | Production. | | |
|---|---|---|---|---|---|---|
| | 1912 | 1913 | 1914 | 1912 | 1913 | 1914 |
| ASIA. | *Acres.* | *Acres.* | *Acres.* | *Bushels.* | *Bushels.* | *Bushels.* |
| Japan | 173,000 | 186,000 | 187,000 | 25,669,000 | 26,139,000 | 25,002,000 |
| Russia, Asiatic | 342,000 | 399,000 | 561,000 | 27,917,000 | 33,151,000 | 55,741,000 |
| Total | 515,000 | 585,000 | 748,000 | 53,586,000 | 59,290,000 | 80,743,000 |
| AFRICA. | | | | | | |
| Algeria | 45,000 | 48,000 | (1) | 1,607,000 | 2,119,000 | (1) |
| Union of South Africa | [2] 62,000 | (1) | (1) | [2] 3,685,000 | (1) | (1) |
| Total | 107,000 | .......... | .......... | 5,292,000 | .......... | .......... |
| AUSTRALASIA. | | | | | | |
| Australia: | | | | | | |
| Queensland | 8,000 | 9,000 | 10,000 | 489,000 | 612,000 | 618,000 |
| New South Wales | 43,000 | 34,000 | 39,000 | 2,806,000 | 3,145,000 | 3,573,000 |
| Victoria | 48,000 | 48,000 | 75,000 | 4,446,000 | 7,135,000 | 6,593,000 |
| South Australia | 7,000 | 9,000 | 11,000 | 846,000 | 1,235,000 | 1,230,000 |
| Western Australia | 3,000 | 5,000 | 5,000 | 348,000 | 506,000 | 665,000 |
| Tasmania | 22,000 | [3] 25,000 | 31,000 | 2,321,000 | [3] 2,711,000 | 3,001,000 |
| Total Australia | 131,000 | 130,000 | 171,000 | 11,256,000 | 15,344,000 | 15,680,000 |
| New Zealand | 28,000 | 23,000 | 29,000 | 5,410,000 | 5,514,000 | 5,869,000 |
| Total Australasia | 159,000 | 153,000 | 200,000 | 16,666,000 | 20,858,000 | 21,549,000 |
| Grand total | .......... | .......... | .......... | 5,872,953,000 | [4] 5,714,188,000 | .......... |

[1] No official statistics.
[2] Census of 1911.
[3] Includes Federal Territory.
[4] Total, excluding Bulgaria, Malta, Serbia, Spain, and the Union of South Africa.

**Table 63.**—*Potatoes: Total production of countries mentioned in Table 62, 1900–1914.*

| Year. | Production. | Year. | Production. | Year. | Production. | Year. | Production. |
|---|---|---|---|---|---|---|---|
| | *Bushels.* | | *Bushels.* | | *Bushels.* | | *Bushels.* |
| 1900 | 4,382,031,000 | 1904 | 4,298,049,000 | 1908 | 5,295,043,000 | 1912 | 5,872,953,000 |
| 1901 | 4,669,958,000 | 1905 | 5,254,598,000 | 1909 | 5,595,567,000 | 1913 | .......... |
| 1902 | 4,674,000,000 | 1906 | 4,789,112,000 | 1910 | 5,242,278,000 | 1914 | .......... |
| 1903 | 4,409,793,000 | 1907 | 5,122,078,000 | 1911 | 4,842,109,000 | | |

**Table 64.**—*Potatoes: Average yield, per acre, of undermentioned countries in 1900–1914.*

| Year. | United States. | Russia (European).[1] | Germany.[1] | Austria.[1] | Hungary proper.[1] | France.[1] | United Kingdom.[1] |
|---|---|---|---|---|---|---|---|
| | *Bushels.* | *Bushels.* | *Bushels.* | *Bushels.* | *Bushels.* | *Bushels.* | *Bushels.* |
| Average (1900–1909) | 91.4 | 99.9 | 200.0 | 151.1 | 118.7 | 133.8 | 193.8 |
| 1905 | 87.0 | 106.6 | 216.7 | 182.5 | 126.8 | 142.5 | 218.8 |
| 1906 | 102.2 | 94.9 | 193.3 | 158.4 | 128.7 | 99.5 | 192.2 |
| 1907 | 95.4 | 102.4 | 205.3 | 173.2 | 126.6 | 136.2 | 171.0 |
| 1908 | 85.7 | 102.9 | 209.2 | 154.0 | 96.6 | 163.7 | 231.1 |
| 1909 | 106.1 | 111.5 | 208.9 | 157.3 | 125.2 | 160.3 | 222.1 |
| 1910 | 93.8 | 121.1 | 196.1 | 160.0 | 117.4 | 81.9 | 209.1 |
| 1911 | 80.9 | 104.2 | 153.9 | 137.2 | 106.3 | 121.8 | 241.5 |
| 1912 | 113.4 | 121.5 | 223.5 | 149.0 | 129.2 | 142.9 | 177.0 |
| 1913 | 90.4 | 110.6 | 235.8 | 134.7 | 118.4 | 127.3 | 242.0 |
| 1914 | 109.5 | .......... | 200.1 | .......... | 129.0 | 119.9 | 233.3 |
| Average (1905–1914) | 96.4 | .......... | 204.3 | .......... | 120.4 | 120.6 | 213.8 |

[1] Bushels of 60 pounds.

## POTATOES—Continued.

### TABLE 65.—*Potatoes: Acreage, production, value, exports, etc., in the United States, 1849–1915.*

NOTE.—Figures in *italics* are census returns; figures in roman are estimates of the Department of Agriculture. Estimates of acres are obtained by applying estimated percentages of increase or decrease to the published numbers of the preceding year, except that a revised base is used for applying percentage estimates whenever new census data are available.

| Year. | Acreage. | Average yield per acre. | Production. | Average farm price per bushel Dec. 1. | Farm value Dec. 1. | Chicago cash price per bushel, fair to fancy.[1] | | | | Domestic exports, fiscal year beginning July 1. | Imports during fiscal year beginning July 1. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | December. | | Following May. | | | |
| | | | | | | Low. | High. | Low. | High. | | |
| | *Acres.* | *Bush.* | *Bushels.* | *Cts.* | *Dollars.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Bushels.* | *Bushels.* |
| *1849* | ...... | ...... | *65,798,000* | ...... | ...... | ...... | ...... | ...... | ...... | 155,595 | ...... |
| *1859* | ...... | ...... | *111,149,000* | ...... | ...... | ...... | ...... | ...... | ...... | 380,372 | ...... |
| 1866 | 1,069,000 | 100.2 | 107,201,000 | 47.3 | 50,723,000 | ...... | ...... | ...... | ...... | 512,380 | 198,265 |
| 1867 | 1,192,000 | 82.0 | 97,783,000 | 65.9 | 64,462,000 | ...... | ...... | ...... | ...... | 378,605 | 209,555 |
| 1868 | 1,132,000 | 93.8 | 106,090,000 | 59.3 | 62,919,000 | ...... | ...... | ...... | ...... | 508,249 | 138,479 |
| 1869 | 1,222,000 | 109.5 | 133,886,000 | 42.9 | 57,481,000 | ...... | ...... | ...... | ...... | 596,968 | 75,336 |
| *1869* | ...... | ...... | *143,337,000* | ...... | ...... | ...... | ...... | ...... | ...... | ...... | ...... |
| 1870 | 1,325,000 | 86.6 | 114,775,000 | 65.0 | 74,621,000 | ...... | ...... | ...... | ...... | 553,070 | 458,758 |
| 1871 | 1,221,000 | 98.7 | 120,462,000 | 53.9 | 64,905,000 | ...... | ...... | ...... | ...... | 621,537 | 96,259 |
| 1872 | 1,331,000 | 85.3 | 113,516,000 | 53.5 | 60,692,000 | ...... | ...... | ...... | ...... | 515,306 | 346,846 |
| 1873 | 1,295,000 | 81.9 | 106,089,000 | 65.2 | 69,154,000 | ...... | ...... | ...... | ...... | 497,413 | 549,073 |
| 1874 | 1,310,000 | 80.9 | 105,981,000 | 61.5 | 65,223,000 | ...... | ...... | ...... | ...... | 609,642 | 188,757 |
| 1875 | 1,510,000 | 110.5 | 166,877,000 | 34.4 | 57,358,000 | ...... | ...... | ...... | ...... | 704,379 | 92,148 |
| 1876 | 1,742,000 | 71.7 | 124,827,000 | 61.9 | 77,320,000 | ...... | ...... | ...... | ...... | 529,650 | 3,205,555 |
| 1877 | 1,792,000 | 94.9 | 170,092,000 | 43.7 | 74,272,000 | ...... | ...... | ...... | ...... | 744,409 | 528,584 |
| 1878 | 1,777,000 | 69.9 | 124,127,000 | 58.7 | 72,924,000 | ...... | ...... | ...... | ...... | 625,342 | 2,624,149 |
| 1879 | 1,837,000 | 98.9 | 181,626,000 | 43.6 | 79,154,000 | ...... | ...... | ...... | ...... | 696,080 | 721,868 |
| *1879* | ...... | ...... | *169,459,000* | ...... | ...... | ...... | ...... | ...... | ...... | ...... | ...... |
| 1880 | 1,843,000 | 91.0 | 167,660,000 | 48.3 | 81,062,000 | ...... | ...... | ...... | ...... | 638,840 | 2,170,372 |
| 1881 | 2,042,000 | 53.5 | 109,145,000 | 91.0 | 99,291,000 | ...... | ...... | ...... | ...... | 408,286 | 8,789,860 |
| 1882 | 2,172,000 | 78.7 | 170,973,000 | 55.7 | 95,305,000 | ...... | ...... | ...... | ...... | 439,443 | 2,362,362 |
| 1883 | 2,289,000 | 90.9 | 208,164,000 | 42.2 | 87,849,000 | ...... | ...... | ...... | ...... | 554,613 | 425,408 |
| 1884 | 2,221,000 | 85.8 | 190,642,000 | 39.6 | 75,524,000 | ...... | ...... | ...... | ...... | 380,868 | 658,633 |
| 1885 | 2,266,000 | 77.2 | 175,029,000 | 44.7 | 78,153,000 | ...... | ...... | 33 | 50 | 494,948 | 1,937,416 |
| 1886 | 2,287,000 | 73.5 | 168,051,000 | 46.7 | 78,442,000 | 44 | 47 | 65 | 90 | 434,864 | 1,432,490 |
| 1887 | 2,357,000 | 56.9 | 134,103,000 | 68.2 | 91,507,000 | 70 | 83 | 65 | 85 | 403,880 | 8,259,538 |
| 1888 | 2,533,000 | 79.9 | 202,365,000 | 40.2 | 81,414,000 | 30 | 37 | 24 | 45 | 471,955 | 883,380 |
| 1889 | 2,648,000 | 77.4 | 204,881,000 | 35.4 | 72,611,000 | 33 | 45 | 30 | 60 | 406,618 | 3,415,578 |
| *1889* | ...... | ...... | *217,546,000* | ...... | ...... | ...... | ...... | ...... | ...... | ...... | ...... |
| 1890 | 2,652,000 | 55.9 | 148,290,000 | 75.8 | 112,342,000 | 82 | 93 | 95 | 110 | 341,189 | 5,401,912 |
| 1891 | 2,715,000 | 93.7 | 254,424,000 | 35.8 | 91,013,000 | 30 | 40 | 30 | 50 | 557,022 | 186,871 |
| 1892 | 2,548,000 | 61.5 | 156,655,000 | 66.1 | 103,568,000 | 60 | 72 | 70 | 98 | 845,720 | 4,317,021 |
| 1893 | 2,605,000 | 70.3 | 183,034,000 | 59.4 | 108,662,000 | 51 | 60 | 64 | 88 | 803,111 | 3,002,578 |
| 1894 | 2,738,000 | 62.4 | 170,787,000 | 53.6 | 91,527,000 | 43 | 58 | 40 | 70 | 572,957 | 1,341,533 |
| 1895 | 2,955,000 | 100.6 | 297,237,000 | 26.6 | 78,985,000 | 18 | 24 | 10 | 23 | 680,049 | 175,240 |
| 1896 | 2,767,000 | 91.1 | 252,235,000 | 28.6 | 72,182,000 | 18 | 26 | 19 | 26 | 926,646 | 246,178 |
| 1897 | 2,535,000 | 64.7 | 164,016,000 | 54.7 | 89,643,000 | 50 | 62 | 60 | 87 | 605,187 | 1,171,378 |
| 1898 | 2,558,000 | 75.2 | 192,306,000 | 41.4 | 79,575,000 | 30 | 36 | 33 | 52 | 579,833 | 530,420 |
| 1899 | 2,581,000 | 88.6 | 228,783,000 | 39.0 | 89,329,000 | 35 | 46 | 27 | 39 | 809,472 | 155,861 |
| *1899* | *2,939,000* | *93.0* | *273,318,000* | ...... | ...... | ...... | ...... | ...... | ...... | ...... | ...... |
| 1900 | 2,611,000 | 80.8 | 210,927,000 | 43.1 | 90,811,000 | 40 | 48 | 35 | 60 | 741,483 | 371,911 |
| 1901 | 2,864,000 | 65.5 | 187,598,000 | 76.7 | 143,979,000 | 75 | 82 | 58 | 100 | 528,484 | 7,656,162 |
| 1902 | 2,966,000 | 96.0 | 284,633,000 | 47.1 | 134,111,000 | 42 | 48 | 42 | 60 | 843,075 | 358,505 |
| 1903 | 2,917,000 | 84.7 | 247,128,000 | 61.4 | 151,638,000 | 60 | 66 | 95 | 116 | 484,042 | 3,166,581 |
| 1904 | 3,016,000 | 110.4 | 332,830,000 | 45.3 | 150,673,000 | 32 | 38 | 20 | 25 | 1,163,270 | 181,199 |
| 1905 | 2,997,000 | 87.0 | 260,741,000 | 61.7 | 160,821,000 | 55 | 66 | 48 | 73 | 1,000,326 | 1,948,160 |
| 1906 | 3,013,000 | 102.2 | 308,038,000 | 51.1 | 157,547,000 | 40 | 43 | 55 | 75 | 1,530,461 | 176,917 |
| 1907 | 3,128,000 | 95.4 | 298,262,000 | 61.8 | 184,184,000 | 46 | 58 | 50 | 80 | 1,208,894 | 403,952 |
| 1908 | 3,257,000 | 85.7 | 278,985,000 | 70.6 | 197,039,000 | 60 | 77 | 70 | 150 | 763,651 | 8,383,966 |
| 1909 | 3,525,000 | 106.8 | 376,537,000 | ...... | ...... | ...... | ...... | ...... | ...... | ...... | ...... |
| *1909* | *3,669,000* | *106.1* | *389,195,000* | 54.1 | 210,667,000 | 20 | 58 | 16 | 34 | 999,476 | 353,208 |
| 1910[2] | 3,720,000 | 93.8 | 349,032,000 | 55.7 | 194,566,000 | 30 | 48 | 35 | 75 | 2,383,887 | 218,984 |
| 1911 | 3,619,000 | 80.9 | 292,737,000 | 79.9 | 233,778,000 | 70 | 100 | 90 | 200 | 1,237,276 | 13,734,695 |
| 1912 | 3,711,000 | 113.4 | 420,647,000 | 50.5 | 212,550,000 | 40 | 65 | 33 | 70 | 2,028,261 | 337,230 |
| 1913 | 3,668,000 | 90.4 | 331,525,000 | 68.7 | 227,903,000 | 50 | 70 | 60 | 90 | 1,794,073 | 3,645,993 |
| 1914 | 3,711,000 | 110.5 | 409,921,000 | 48.7 | 199,460,000 | 30 | 66 | 34 | 150 | 3,135,474 | 270,942 |
| 1915 | 3,761,000 | 95.5 | 359,103,000 | 61.6 | 221,104,000 | 53 | 95 | ...... | ...... | ...... | ...... |

[1] Burbank to 1910.

[2] Figures adjusted to census basis.

## POTATOES—Continued.

### TABLE 66.—*Potatoes: Acreage, production, and total farm value, by States, 1915.*

[000 omitted.]

| State. | Acreage. | Production. | Farm value Dec. 1. | State. | Acreage. | Production. | Farm value Dec 1. |
|---|---|---|---|---|---|---|---|
| | *Acres.* | *Bushels.* | *Dollars.* | | *Acres.* | *Bushels.* | *Dollars.* |
| Maine | 142 | 22,010 | 15,407 | North Dakota | 80 | 7,200 | 2,952 |
| New Hampshire | 16 | 1,520 | 1,444 | South Dakota | 68 | 7,820 | 2,737 |
| Vermont | 24 | 2,592 | 2,100 | Nebraska | 110 | 11,550 | 4,851 |
| Massachusetts | 26 | 3,120 | 2,933 | Kansas | 71 | 5,893 | 4,361 |
| Rhode Island | 5 | 550 | 506 | Kentucky | 51 | 6,426 | 3,534 |
| Connecticut | 24 | 2,280 | 2,189 | Tennessee | 36 | 3,168 | 1,996 |
| New York | 355 | 22,010 | 18,048 | Alabama | 20 | 1,600 | 1,440 |
| New Jersey | 93 | 12,090 | 9,068 | Mississippi | 13 | 1,170 | 983 |
| Pennsylvania | 280 | 20,160 | 15,120 | Louisiana | 28 | 1,428 | 1,357 |
| Delaware | 11 | 1,045 | 784 | Texas | 42 | 2,730 | 2,866 |
| Maryland | 44 | 4,268 | 2,646 | Oklahoma | 35 | 2,975 | 2,499 |
| Virginia | 140 | 17,500 | 10,675 | Arkansas | 28 | 2,520 | 1,915 |
| West Virginia | 50 | 5,850 | 3,802 | Montana | 39 | 6,045 | 3,022 |
| North Carolina | 35 | 3,150 | 2,300 | Wyoming | 16 | 2,400 | 1,440 |
| South Carolina | 11 | 880 | 1,012 | Colorado | 53 | 7,155 | 3,935 |
| Georgia | 16 | 1,040 | 1,030 | New Mexico | 8 | 800 | 760 |
| Florida | 12 | 960 | 1,104 | Arizona | 1 | 95 | 95 |
| Ohio | 153 | 12,546 | 8,782 | Utah | 20 | 2,500 | 1,575 |
| Indiana | 75 | 7,125 | 3,990 | Nevada | 13 | 2,236 | 1,565 |
| Illinois | 126 | 13,860 | 8,177 | | | | |
| | | | | Idaho | 28 | 3,500 | 1,960 |
| Michigan | 355 | 20,945 | 11,729 | Washington | 61 | 8,235 | 4,365 |
| Wisconsin | 298 | 25,926 | 11,667 | Oregon | 48 | 5,520 | 3,312 |
| Minnesota | 285 | 30,210 | 11,782 | California | 78 | 10,140 | 7,605 |
| Iowa | 148 | 15,540 | 8,392 | | | | |
| Missouri | 90 | 8,820 | 5,292 | United States | 3,761 | 359,103 | 221,104 |

### TABLE 67.—*Potatoes: Condition of crop, United States, on first of months named, 1895–1915.*

| Year. | July. | Aug. | Sept. | Oct. | Year. | July. | Aug. | Sept. | Oct. |
|---|---|---|---|---|---|---|---|---|---|
| | *P.ct.* | *P.ct.* | *P.ct.* | *P.ct.* | | *P.ct.* | *P.ct.* | *P.ct.* | *P.ct.* |
| 1895 | 91.5 | 89.7 | 90.8 | 87.4 | 1906 | 91.5 | 89.0 | 85.3 | 82.2 |
| 1896 | 99.0 | 94.8 | 83.2 | 81.7 | 1907 | 90.2 | 88.5 | 80.2 | 77.0 |
| 1897 | 87.8 | 77.9 | 66.7 | 61.6 | 1908 | 89.6 | 82.9 | 73.7 | 68.7 |
| 1898 | 95.5 | 83.9 | 77.7 | 72.5 | 1909 | 93.0 | 85.8 | 80.9 | 78.8 |
| 1899 | 93.8 | 93.0 | 86.3 | 81.7 | 1910 | 86.3 | 75.8 | 70.5 | 71.8 |
| 1900 | 91.3 | 88.2 | 80.0 | 74.4 | 1911 | 76.0 | 62.3 | 59.8 | 62.3 |
| 1901 | 87.4 | 62.3 | 52.2 | 54.0 | 1912 | 88.9 | 87.8 | 87.2 | 85.1 |
| 1902 | 92.9 | 94.8 | 89.1 | 82.5 | 1913 | 86.2 | 78.0 | 69.9 | 67.7 |
| 1903 | 88.1 | 87.2 | 84.3 | 74.6 | 1914 | 83.6 | 79.0 | 75.8 | 78.3 |
| 1904 | 93.9 | 94.1 | 91.6 | 86.5 | 1915 | 91.2 | 92.0 | 82.7 | 74.2 |
| 1905 | 91.2 | 87.2 | 80.9 | 74.3 | | | | | |

## POTATOES—Continued.

**Table 68.**—*Potatoes: Yield per acre, price per bushel Dec. 1, and value per acre, by States.*

| State. | Yield per acre (bushels). | | | | | | | | | | | Farm price per bushel (cents). | | | | | | Value per acre (dollars).[1] | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 10-year average, 1906-1915. | 1906 | 1907 | 1908 | 1909 | 1910 | 1911 | 1912 | 1913 | 1914 | 1915 | 10-year average, 1906-1915. | 1911 | 1912 | 1913 | 1914 | 1915 | 5-year average, 1910-1914. | 1915 |
| Me. | 204 | 210 | 145 | 225 | 225 | 220 | 180 | 198 | 220 | 260 | 155 | 54 | 77 | 55 | 53 | 33 | 70 | 108.46 | 108.50 |
| N. H. | 125 | 112 | 120 | 100 | 130 | 150 | 125 | 140 | 122 | 159 | 95 | 70 | 87 | 61 | 83 | 60 | 95 | 93.76 | 90.25 |
| Vt. | 123 | 101 | 120 | 73 | 155 | 130 | 105 | 140 | 127 | 168 | 108 | 60 | 79 | 55 | 72 | 47 | 81 | 77.77 | 87.48 |
| Mass. | 118 | 114 | 120 | 95 | 125 | 125 | 93 | 130 | 105 | 155 | 120 | 80 | 96 | 75 | 85 | 71 | 94 | 94.72 | 112.80 |
| R. I. | 126 | 108 | 110 | 150 | 125 | 136 | 110 | 113 | 130 | 165 | 110 | 84 | 106 | 77 | 90 | 70 | 92 | 105.99 | 101.20 |
| Conn. | 104 | 98 | 100 | 80 | 120 | 125 | 85 | 107 | 92 | 140 | 95 | 82 | 105 | 78 | 87 | 65 | 96 | 86.25 | 91.20 |
| N. Y. | 97 | 105 | 98 | 82 | 120 | 102 | 74 | 106 | 74 | 145 | 62 | 63 | 90 | 58 | 80 | 44 | 82 | 60.01 | 50.84 |
| N. J. | 102 | 120 | 120 | 72 | 90 | 105 | 73 | 108 | 95 | 108 | 130 | 76 | 105 | 66 | 82 | 61 | 76 | 71.99 | 97.50 |
| Pa. | 85 | 94 | 88 | 72 | 78 | 88 | 56 | 109 | 88 | 105 | 72 | 68 | 93 | 57 | 80 | 58 | 75 | 58.25 | 54.00 |
| Del. | 90 | 97 | 99 | 82 | 96 | 103 | 60 | 100 | 87 | 80 | 95 | 72 | 96 | 70 | 75 | 70 | 75 | 62.13 | 71.25 |
| Md. | 86 | 93 | 95 | 77 | 80 | 95 | 45 | 112 | 87 | 78 | 97 | 65 | 91 | 58 | 67 | 60 | 62 | 52.46 | 60.14 |
| Va. | 85 | 75 | 80 | 88 | 92 | 98 | 45 | 87 | 94 | 65 | 125 | 71 | 96 | 65 | 80 | 77 | 61 | 56.37 | 76.25 |
| W. Va. | 86 | 97 | 83 | 84 | 98 | 92 | 45 | 112 | 83 | 54 | 117 | 76 | 104 | 62 | 90 | 81 | 65 | 59.26 | 76.05 |
| N. C. | 76 | 75 | 88 | 79 | 74 | 89 | 48 | 85 | 80 | 52 | 90 | 81 | 108 | 76 | 82 | 92 | 73 | 58.97 | 65.70 |
| S. C. | 80 | 82 | 70 | 81 | 85 | 90 | 70 | 90 | 80 | 70 | 80 | 115 | 122 | 112 | 130 | 125 | 115 | 94.44 | 92.00 |
| Ga. | 76 | 77 | 83 | 78 | 81 | 82 | 72 | 78 | 81 | 60 | 65 | 103 | 110 | 87 | 105 | 105 | 99 | 76.24 | 64.35 |
| Fla. | 85 | 85 | 80 | 83 | 95 | 90 | 90 | 93 | 76 | 80 | 80 | 116 | 145 | 110 | 117 | 113 | 115 | 100.42 | 92.00 |
| Ohio. | 86 | 110 | 76 | 77 | 93 | 82 | 65 | 112 | 64 | 95 | 82 | 64 | 84 | 53 | 85 | 53 | 70 | 52.11 | 57.40 |
| Ind. | 81 | 89 | 87 | 57 | 95 | 84 | 58 | 114 | 53 | 80 | 95 | 64 | 87 | 50 | 84 | 56 | 56 | 47.76 | 53.20 |
| Ill. | 79 | 97 | 87 | 71 | 91 | 75 | 50 | 101 | 46 | 60 | 110 | 70 | 90 | 60 | 89 | 61 | 59 | 45.48 | 64.90 |
| Mich. | 94 | 95 | 90 | 72 | 105 | 105 | 94 | 105 | 96 | 121 | 59 | 45 | 71 | 41 | 53 | 30 | 56 | 46.90 | 33.04 |
| Wis. | 102 | 97 | 91 | 80 | 102 | 95 | 116 | 120 | 109 | 124 | 87 | 44 | 62 | 34 | 54 | 30 | 45 | 48.98 | 39.15 |
| Minn. | 102 | 92 | 101 | 76 | 115 | 61 | 115 | 135 | 110 | 114 | 106 | 44 | 58 | 28 | 52 | 32 | 39 | 47.44 | 41.34 |
| Iowa. | 84 | 95 | 85 | 80 | 89 | 72 | 74 | 109 | 48 | 86 | 105 | 59 | 73 | 46 | 82 | 59 | 54 | 47.49 | 56.70 |
| Mo. | 71 | 84 | 82 | 80 | 85 | 86 | 27 | 84 | 38 | 45 | 98 | 74 | 102 | 69 | 93 | 73 | 60 | 42.43 | 58.80 |
| N. D. | 96 | 98 | 89 | 85 | 110 | 41 | 120 | 128 | 85 | 109 | 90 | 52 | 55 | 28 | 56 | 42 | 41 | 46.51 | 36.90 |
| S. Dak. | 86 | 100 | 84 | 90 | 80 | 44 | 72 | 105 | 78 | 90 | 115 | 54 | 70 | 36 | 63 | 47 | 35 | 43.41 | 40.25 |
| Nebr. | 74 | 87 | 73 | 78 | 78 | 60 | 52 | 80 | 48 | 80 | 105 | 64 | 92 | 51 | 78 | 54 | 42 | 43.94 | 44.10 |
| Kans. | 65 | 79 | 65 | 80 | 79 | 57 | 22 | 82 | 40 | 62 | 83 | 83 | 106 | 73 | 91 | 77 | 74 | 43.72 | 61.42 |
| Ky. | 77 | 82 | 80 | 62 | 92 | 92 | 39 | 101 | 49 | 45 | 126 | 76 | 107 | 67 | 102 | 84 | 55 | 50.84 | 69.30 |
| Tenn. | 72 | 80 | 85 | 80 | 75 | 80 | 41 | 88 | 64 | 43 | 88 | 77 | 108 | 70 | 97 | 91 | 63 | 51.82 | 55.44 |
| Ala. | 82 | 75 | 95 | 85 | 80 | 80 | 78 | 81 | 84 | 79 | 80 | 93 | 118 | 90 | 105 | 101 | 90 | 81.63 | 72.00 |
| Miss. | 86 | 85 | 90 | 91 | 87 | 85 | 83 | 89 | 80 | 80 | 90 | 95 | 115 | 90 | 100 | 95 | 84 | 82.29 | 75.60 |
| La. | 67 | 62 | 67 | 82 | 75 | 55 | 69 | 73 | 70 | 70 | 51 | 91 | 100 | 83 | 96 | 97 | 95 | 62.34 | 48.45 |
| Tex. | 62 | 77 | 73 | 71 | 50 | 51 | 57 | 63 | 52 | 61 | 65 | 106 | 126 | 105 | 112 | 104 | 105 | 63.15 | 68.25 |
| Okla. | 65 | 80 | 70 | 78 | 70 | 60 | 18 | 60 | 60 | 70 | 85 | 97 | 124 | 93 | 105 | 90 | 84 | 52.82 | 71.40 |
| Ark. | 73 | 80 | 70 | 82 | 70 | 84 | 55 | 70 | 72 | 60 | 90 | 90 | 115 | 92 | 100 | 97 | 76 | 65.85 | 68.40 |
| Mont. | 149 | 152 | 150 | 138 | 180 | 120 | 150 | 165 | 140 | 140 | 155 | 61 | 74 | 40 | 67 | 64 | 50 | 92.48 | 77.50 |
| Wyo. | 131 | 115 | 200 | 158 | 160 | 100 | 42 | 140 | 140 | 108 | 150 | 74 | 140 | 60 | 65 | 70 | 60 | 78.28 | 90.00 |
| Colo. | 116 | 125 | 150 | 125 | 160 | 100 | 35 | 95 | 115 | 120 | 135 | 59 | 99 | 41 | 65 | 50 | 55 | 52.67 | 74.25 |
| N. Mex. | 90 | 121 | 100 | 100 | 85 | 47 | 80 | 100 | 68 | 100 | 100 | 98 | 100 | 65 | 140 | 95 | 95 | 76.82 | 95.00 |
| Ariz. | 112 | 192 | 140 | 110 | 90 | 92 | 95 | 125 | 75 | 110 | 95 | 130 | 140 | 125 | 135 | 120 | 100 | 127.68 | 95.00 |
| Utah. | 152 | 165 | 100 | 160 | 180 | 142 | 140 | 185 | 180 | 140 | 125 | 59 | 85 | 49 | 58 | 60 | 63 | 96.37 | 78.75 |
| Nev. | 162 | 175 | 200 | 120 | 180 | 150 | 160 | 178 | 160 | 130 | 172 | 76 | 93 | 60 | 68 | 70 | 70 | 115.08 | 120.40 |
| Idaho. | 161 | 175 | 145 | 130 | 200 | 142 | 180 | 185 | 170 | 155 | 125 | 51 | 65 | 29 | 50 | 48 | 56 | 84.47 | 70.00 |
| Wash. | 141 | 129 | 150 | 120 | 170 | 131 | 160 | 167 | 123 | 128 | 135 | 56 | 68 | 36 | 60 | 55 | 53 | 81.75 | 71.55 |
| Oreg. | 122 | 101 | 125 | 99 | 160 | 105 | 130 | 155 | 135 | 97 | 115 | 59 | 67 | 31 | 58 | 60 | 60 | 69.03 | 69.00 |
| Cal. | 129 | 125 | 145 | 107 | 130 | 130 | 135 | 130 | 119 | 138 | 130 | 77 | 90 | 65 | 70 | 70 | 75 | 99.28 | 97.50 |
| U. S. | 97.5 | 102.2 | 95.4 | 85.7 | 106.8 | 93.8 | 80.9 | 113.4 | 90.4 | 110.5 | 95.5 | 60.4 | 79.9 | 50.5 | 68.7 | 48.7 | 61.6 | 55.01 | 58.79 |

[1] Based upon farm price Dec. 1.

## POTATOES—Continued.

**TABLE 69.**—*Potatoes: Farm price per bushel on first of each month, by geographical divisions, 1914 and 1915.*

| Month. | United States. | | North Atlantic States. | | South Atlantic States. | | N. Central States east of Miss. R. | | N. Central States west of Miss. R. | | South Central States. | | Far Western States. | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1915 | 1914 | 1915 | 1914 | 1915 | 1914 | 1915 | 1914 | 1915 | 1914 | 1915 | 1914 | 1915 | 1914 |
| | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* |
| January | 49.7 | 68.4 | 48.4 | 71.3 | 81.1 | 85.1 | 37.2 | 59.7 | 49.5 | 64.3 | 97.3 | 105.1 | 56.7 | 64.5 |
| February | 50.4 | 69.7 | 45.6 | 73.5 | 79.3 | 88.2 | 37.4 | 60.1 | 52.3 | 65.7 | 98.4 | 107.6 | 66.0 | 64.2 |
| March | 50.4 | 70.7 | 44.7 | 72.7 | 81.4 | 88.5 | 36.1 | 61.0 | 54.4 | 68.5 | 104.3 | 111.6 | 65.7 | 65.9 |
| April | 47.8 | 70.0 | 38.4 | 75.0 | 80.5 | 93.0 | 35.9 | 59.0 | 51.7 | 68.7 | 104.4 | 110.5 | 66.9 | 58.2 |
| May | 50.5 | 71.4 | 40.2 | 78.1 | 80.3 | 94.4 | 36.5 | 61.7 | 54.5 | 68.0 | 102.3 | 110.1 | 79.0 | 57.1 |
| June | 50.8 | 71.3 | 38.8 | 77.5 | 78.1 | 89.5 | 35.3 | 64.0 | 54.0 | 68.3 | 103.5 | 109.5 | 89.2 | 56.4 |
| July | 52.1 | 81.5 | 39.3 | 85.2 | 68.2 | 99.9 | 36.6 | 75.8 | 58.8 | 83.5 | 89.4 | 100.6 | 95.8 | 67.7 |
| August | 56.3 | 87.1 | 44.1 | 91.7 | 56.2 | 97.8 | 50.4 | 87.5 | 64.0 | 80.3 | 74.5 | 106.4 | 87.3 | 75.3 |
| September | 50.5 | 74.9 | 49.3 | 70.8 | 57.8 | 92.3 | 42.8 | 70.3 | 45.7 | 67.9 | 77.8 | 111.1 | 67.7 | 80.5 |
| October | 48.8 | 64.7 | 54.7 | 59.8 | 62.0 | 89.1 | 38.7 | 60.6 | 39.9 | 57.2 | 79.5 | 107.2 | 54.9 | 66.6 |
| November | 60.8 | 52.8 | 78.9 | 49.6 | 66.7 | 82.7 | 50.7 | 38.6 | 40.1 | 44.7 | 84.0 | 99.6 | 54.8 | 65.3 |
| December | 61.6 | 48.7 | 77.4 | 46.6 | 67.3 | 80.7 | 55.2 | 36.5 | 46.4 | 46.4 | 75.4 | 94.8 | 60.9 | 60.7 |

**TABLE 70.**—*Potatoes: Wholesale price, 1900–1915.*

| Date. | New York. | | Chicago. | | Minneapolis. | | St. Louis. | | Cincinnati. | | Denver. | | San Francisco. | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | State and western, per 180 pounds. | | Fair to fancy, per bushel.[1] | | Per bushel. | | Burbank, per bushel. | | Per bushel.[2] | | Per 100 pounds. | | Burbank, Rivers, per 100 pounds. | |
| | Low. | High. | Low. | High. | Low. | High. | Low. | High. | Low. | High. | Low. | High. | Low. | High. |
| 1900 | $1.00 | $1.87 | $0.25 | $0.50 | $0.15 | $0.45 | $0.27 | $0.54 | $0.32 | $0.57 | $0.70 | $1.30 | $0.25 | $1.00 |
| 1901 | 1.12 | 3.00 | .30 | 1.25 | .30 | 1.10 | .18 | 1.40 | .30 | 1.20 | .90 | 3.25 | .30 | 1.20 |
| 1902 | 1.50 | 3.12 | .30 | 1.00 | .20 | 1.15 | .41 | 1.05 | .90 | 3.00 | .75 | 1.95 | .25 | 1.65 |
| 1903 | 1.25 | 2.37 | .38 | .85 | 35 | 1.00 | .40 | 1.25 | 1.20 | 3.00 | .90 | 2.50 | .30 | 1.75 |
| 1904 | 1.25 | 3.87 | .31 | 1.22 | .30 | 1.50 | .36 | 1.25 | 1.20 | 4.80 | .55 | 2.00 | .40 | 1.85 |
| 1905 | .75 | 2.62 | .18 | .72 | .25 | 1.10 | .27 | 1.75 | .25 | .80 | .50 | 1.50 | .35 | 1.25 |
| 1906 | 1.25 | 3.25 | .40 | .87 | 40 | 2.00 | .35 | 1.25 | .45 | 1.05 | 1.00 | 2.00 | .25 | 1.45 |
| 1907 | 1.00 | 2.75 | .30 | .75 | .40 | 1.20 | .43 | 1.25 | .25 | .85 | 1.00 | 2.50 | .50 | 3.50 |
| 1908 | 1.87 | 2.87 | .50 | 1.50 | .50 | 2.25 | .62 | 1.05 | .60 | 1.35 | 1.00 | 3.00 | .30 | 1.25 |
| 1909 | 1.50 | 3.37 | .15 | 1.50 | .45 | 1.40 | .35 | 1.40 | .30 | 1.20 | .90 | 4.00 | .50 | 2.25 |
| 1910 | .87 | 2.00 | .10 | .98 | .25 | 3.25 | .23 | 1.00 | .30 | .65 | .50 | 4.00 | .30 | 1.50 |
| 1911 | 1.12 | 3.12 | .30 | 2.25 | .45 | 1.80 | .42 | 2.00 | .40 | 1.95 | 1.15 | 5.00 | .85 | 2.75 |
| 1912 | .50 | 4.50 | .32 | 2.00 | .25 | 1.40 | .35 | 1.52 | .50 | 1.50 | .75 | 4.50 | .40 | 2.25 |
| 1913 | 1.70 | 2.87 | .15 | .82 | .33 | 1.00 | .30 | .93 | .30 | 1.00 | .50 | 4.00 | .20 | 1.65 |
| 1914 | 1.25 | 3.00 | .28 | 1.75 | .28 | 1.50 | [3] .33 | 1.60 | .45 | 1.70 | .90 | 2.75 | .60 | 1.65 |
| **1915.** | | | | | | | | | | | | | | |
| January | [4] 1.25 | 1.65 | .30 | .50 | .33 | .48 | ...... | ...... | .45 | .50 | .90 | 1.25 | 1.10 | 1.25 |
| February | 1.00 | 1.50 | .35 | .50 | .33 | .65 | ...... | ...... | .45 | .50 | .90 | 1.25 | 1.20 | 1.35 |
| March | 1.25 | 1.50 | .30 | .50 | .30 | .50 | ...... | ...... | .45 | .50 | 1.00 | 1.75 | 1.20 | 1.30 |
| April | 1.25 | 1.75 | .30 | .47 | .37 | .45 | ...... | ...... | .45 | .50 | 1.25 | 1.75 | 1.30 | 1.30 |
| May | 1.25 | 1.45 | .34 | 1.50 | .32 | .55 | ...... | ...... | .42 | .50 | 1.50 | 1.75 | 2.25 | 3.50 |
| June | ...... | ...... | .18 | 1.50 | .32 | .55 | ...... | ...... | .30 | .45 | 1.50 | 2.25 | 1.00 | 1.75 |
| July | ...... | ...... | .17 | .85 | .40 | 1.00 | ...... | ...... | .30 | .35 | 1.50 | 2.25 | .90 | 1.00 |
| August | ...... | ...... | .45 | .63 | .27 | .50 | ...... | ...... | .35 | .45 | 1.00 | 2.00 | .95 | 1.15 |
| September | ...... | 2.00 | .32 | .60 | .25 | .36 | ...... | ...... | .35 | .50 | .85 | 1.35 | .85 | 1.00 |
| October | 1.75 | 2.50 | .37 | .70 | .35 | .65 | ...... | ...... | .50 | .75 | .85 | 1.25 | .90 | 1.15 |
| November | 2.00 | 2.50 | .38 | .68 | .40 | .60 | ...... | ...... | .55 | .70 | .90 | 1.40 | 1.00 | 1.25 |
| December | [2] 2.40 | 3.00 | .53 | .95 | .40 | .90 | ...... | ...... | .65 | .90 | 1.10 | 1.60 | 1.25 | 1.50 |
| Year | 1.00 | 3.00 | .17 | 1.50 | .25 | 1.00 | ...... | ...... | .30 | .90 | .85 | 2.25 | .85 | 3.50 |

[1] Burbank to 1910.
[2] Per barrel 1900, 1902–1904, and from August to November, 1914.
[3] Early Ohio, home grown. July and August.
[4] Western not quoted. January to September, inclusive.

## POTATOES—Continued.

### Table 71.—*Potatoes: International trade, calendar years 1912–1914.*

[See "General note," p. 417.]

EXPORTS.

[000 omitted.]

| Country. | 1912 | 1913 | 1914 (prelim.). |
|---|---|---|---|
| | *Bushels.* | *Bushels.* | *Bushels.* |
| Argentina | 793 | 794 | 544 |
| Austria-Hungary | 1,029 | 1,179 | |
| Belgium | 9,460 | 9,067 | |
| Canada | 935 | 2,012 | 1,116 |
| China | 307 | 346 | 272 |
| Denmark | 795 | 510 | 769 |
| France | 8,401 | 6,654 | 3,976 |
| Germany | 4,608 | 12,216 | |
| Italy | 3,592 | 5,177 | 6,296 |
| Japan | 408 | 403 | |
| Netherlands | 17,260 | 15,279 | |
| Portugal | 429 | 556 | |
| Russia | 9,171 | 3,007 | 962 |
| Spain | 1,718 | 2,502 | 1,743 |
| United Kingdom | 13,466 | 911 | 1,893 |
| United States | 1,631 | 1,817 | 2,715 |
| Other countries | 2,379 | 1,745 | |
| Total | 76,382 | 64,175 | |

IMPORTS.

| Country. | 1912 | 1913 | 1914 (prelim.). |
|---|---|---|---|
| Argentina | 280 | 314 | 421 |
| Austria-Hungary | 3,452 | 4,506 | |
| Belgium | 3,728 | 4,683 | |
| Brazil | 1,065 | 1,095 | 697 |
| Canada | 786 | 400 | 664 |
| Cuba | 1,885 | 2,225 | 2,298 |
| Egypt | 647 | 549 | 540 |
| Finland | 459 | 385 | |
| France | 6,149 | 8,490 | 8,748 |
| Germany | 30,214 | 14,038 | |
| Netherlands | 1,226 | 2,041 | |
| Norway | 51 | 176 | 174 |
| Philippine Islands | 377 | 330 | 311 |
| Russia | 268 | 395 | 291 |
| Sweden | 660 | 735 | 452 |
| Switzerland | 3,119 | 3,443 | 4,873 |
| United Kingdom | 10,703 | 17,444 | 6,184 |
| United States | 12,409 | 3,171 | 800 |
| Other countries | 2,656 | 3,194 | |
| Total | 80,134 | 67,614 | |

## SWEET POTATOES.

### Table 72.—*Sweet potatoes: Acreage, production, and value, in the United States, 1849–1915.*

Note.—Figures in *italics* are census returns; figures in roman are estimates of the Department of Agriculture. Estimates of acres are obtained by applying estimated percentages of increase or decrease to the published numbers of the preceding year, except that a revised base is used for applying percentage estimates whenever new census data are available.

| Year. | Acreage. | Average yield per acre. | Production. | Average farm price per bushel Dec. 1. | Farm value Dec. 1. |
|---|---|---|---|---|---|
| | *Acres.* | *Bushels.* | *Bushels.* | *Cents.* | *Dollars.* |
| *1849* | | | *38,268,000* | | |
| *1859* | | | *42 095,000* | | |
| *1869* | | | *21,710,000* | | |
| *1879* | | | *33,379,000* | | |
| *1889* | | | *43,950,000* | | |
| 1899 | *537,000* | *79.1* | *42,517,000* | *46.7* | *19,870,000* |
| 1900 | 544,000 | 88.9 | 48,346,000 | 50.6 | 24,478,000 |
| 1901 | 547,000 | 81.7 | 44,697,000 | 57.5 | 25,720,000 |
| 1902 | 532.000 | 85.2 | 45,344,000 | 58.1 | 26,358,000 |
| 1903 | 548,000 | 89.2 | 48,870,000 | 58.3 | 28,478,000 |
| 1904 | 548,000 | 88.9 | 48,705,000 | 60.4 | 29,424,000 |
| 1905 | 551,000 | 92.6 | 51,034,000 | 58.3 | 29,784,000 |
| 1906 | 554,000 | 90.2 | 49,948,000 | 62.2 | 31,063,000 |
| 1907 | 565,000 | 88.2 | 49,818,000 | 70.0 | 34,858,000 |
| 1908 | 599,000 | 92.4 | 55,352,000 | 66.1 | 36,564,000 |
| *1909* | *641,000* | *92.4* | *59,232,000* | 69.4 | 41.052,000 |
| 1910 | 641,000 | 93.5 | 59,938,000 | 67.1 | 40,216,000 |
| 1911 | 605,000 | 90.1 | 54,538,000 | 75.5 | 41,202,000 |
| 1912 | 583,000 | 95.2 | 55,479,000 | 72.6 | 40,264,000 |
| 1913 | 625,000 | 94.5 | 59,057,000 | 72.6 | 42,884,000 |
| 1914 | 603,000 | 93.8 | 56,574,000 | 73.0 | 41,294,000 |
| 1915 | 719,000 | 103.3 | 74,295,000 | 62.0 | 46,061,000 |

## SWEET POTATOES—Continued.

TABLE 73.—*Sweet potatoes: Acreage, production, and total farm value, by States, 1915.*

| State. | Acreage. | Production. | Farm value Dec. 1. | State. | Acreage. | Production. | Farm value Dec. 1. |
|---|---|---|---|---|---|---|---|
| | *Acres.* | *Bushels.* | *Dollars.* | | *Acres.* | *Bushels.* | *Dollars.* |
| New Jersey | 23,000 | 3,565,000 | 2,496,000 | Missouri | 7,000 | 700,000 | 574,000 |
| Pennsylvania | 1,000 | 105,000 | 79,000 | Kansas | 4,000 | 440,000 | 440,000 |
| Delaware | 5,000 | 675,000 | 418,000 | Kentucky | 10,000 | 1,050,000 | 735,000 |
| Maryland | 8,000 | 1,040,000 | 728,000 | Tennessee | 27,000 | 2,835,000 | 1,673,000 |
| Virginia | 34,000 | 3,740,000 | 2,431,000 | Alabama | 80,000 | 7,200,000 | 4,104,000 |
| West Virginia | 2,000 | 220,000 | 202,000 | Mississippi | 70,000 | 7,700,000 | 4,235,000 |
| North Carolina | 85,000 | 8,925,000 | 4,998,000 | Louisiana | 65,000 | 5,980,000 | 2,990,000 |
| South Carolina | 65,000 | 6,825,000 | 4,436,000 | Texas | 60,000 | 5,880,000 | 4,116,000 |
| Georgia | 95,000 | 8,075,000 | 4,926,000 | Oklahoma | 6,000 | 690,000 | 504,000 |
| Florida | 23,000 | 2,576,000 | 1,752,000 | Arkansas | 30,000 | 3,900,000 | 2,379,000 |
| Ohio | 1,000 | 95,000 | 93,000 | California | 6,000 | 810,000 | 648,000 |
| Indiana | 1,000 | 104,000 | 94,000 | | | | |
| Illinois | 8,000 | 880,000 | 722,000 | United States. | 719,000 | 74,295,000 | 46,081,000 |
| Iowa | 3,000 | 285,000 | 308,000 | | | | |

TABLE 74.—*Sweet potatoes: Condition of crop, United States, on first of months named, 1895–1915.*

| Year. | July. | Aug. | Sept. | Oct. | Year. | July. | Aug. | Sept. | Oct. | Year. | July. | Aug. | Sept. | Oct. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *P.ct.* | *P.ct.* | *P.ct.* | *P.ct.* | | *P.ct.* | *P.ct.* | *P.ct.* | *P.ct.* | | *P.ct.* | *P.ct.* | *P.ct.* | *P.ct.* |
| 1895 | 91.4 | 91.0 | 89.3 | 81.2 | 1902 | 83.6 | 78.3 | 77.2 | 79.7 | 1909 | 89.7 | 86.9 | 81.3 | 77.8 |
| 1896 | 89.3 | 87.1 | 71.7 | 71.1 | 1903 | 90.2 | 88.7 | 91.1 | 83.7 | 1910 | 87.3 | 85.7 | 83.9 | 80.2 |
| 1897 | 86.5 | 86.4 | 85.4 | ...... | 1904 | 87.3 | 88.5 | 89.9 | 86.1 | 1911 | 78.4 | 77.7 | 79.1 | 78.1 |
| 1898 | ...... | 92.0 | 90.6 | 89.9 | 1905 | 90.6 | 90.1 | 89.5 | 88.6 | 1912 | 86.9 | 85.0 | 84.1 | 82.0 |
| 1899 | 85.1 | 84.1 | 80.7 | 74.9 | 1906 | 90.9 | 91.2 | 88.7 | 86.0 | 1913 | 86.5 | 85.8 | 81.4 | 80.1 |
| 1900 | 93.7 | 92.2 | 83.6 | 80.0 | 1907 | 85.9 | 85.7 | 85.7 | 82.7 | 1914 | 77.1 | 75.5 | 81.8 | 80.7 |
| 1901 | 93.1 | 80.7 | 78.7 | 79.0 | 1908 | 89.8 | 88.8 | 88.7 | 85.5 | 1915 | 88.7 | 85.5 | 87.5 | 85.0 |

TABLE 75.—*Sweet potatoes: Yield per acre, price per bushel Dec. 1, and value per acre, by States.*

| State. | Yield per acre (bushels). | | | | | | | | | | | Farm price per bushel (cents). | | | | | | Value per acre (dollars).[1] | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 10-year average, 1906–1915. | 1906 | 1907 | 1908 | 1909 | 1910 | 1911 | 1912 | 1913 | 1914 | 1915 | 10-year average, 1906–1915. | 1911 | 1912 | 1913 | 1914 | 1915 | 5-year average, 1910–1914. | 1915 |
| N. J | 127 | 123 | 105 | 133 | 123 | 140 | 130 | 120 | 138 | 100 | 155 | 81 | 100 | 84 | 78 | 95 | 70 | 103.77 | 108.50 |
| Pa | 106 | 105 | 100 | 102 | 88 | 105 | 121 | 120 | 110 | 105 | 105 | 85 | 105 | 75 | 90 | 86 | 75 | 97.02 | 78.75 |
| Del | 124 | 128 | 93 | 125 | 125 | 115 | 140 | 120 | 135 | 120 | 135 | 65 | 70 | 68 | 60 | 70 | 62 | 81.57 | 83.70 |
| Md | 119 | 115 | 100 | 110 | 115 | 110 | 115 | 125 | 141 | 125 | 130 | 67 | 75 | 63 | 60 | 70 | 70 | 80.18 | 91.00 |
| Va | 96 | 92 | 86 | 95 | 100 | 100 | 90 | 90 | 108 | 92 | 110 | 69 | 74 | 75 | 70 | 76 | 65 | 68.52 | 71.50 |
| W. Va | 97 | 92 | 86 | 72 | 100 | 101 | 110 | 115 | 91 | 92 | 110 | 90 | 100 | 90 | 100 | 98 | 92 | 96.71 | 101.20 |
| N. C | 94 | 87 | 90 | 93 | 99 | 105 | 86 | 90 | 100 | 90 | 105 | 58 | 63 | 62 | 61 | 65 | 56 | 57.45 | 58.80 |
| S. C | 91 | 78 | 88 | 88 | 95 | 91 | 84 | 105 | 92 | 85 | 105 | 66 | 72 | 68 | 75 | 70 | 65 | 63.72 | 68.25 |
| Ga | 87 | 83 | 95 | 86 | 93 | 83 | 81 | 90 | 87 | 85 | 85 | 65 | 73 | 66 | 68 | 69 | 61 | 58.06 | 51.85 |
| Fla | 110 | 110 | 105 | 115 | 105 | 108 | 108 | 112 | 110 | 120 | 112 | 73 | 83 | 73 | 75 | 80 | 68 | 86.18 | 76.16 |
| Ohio | 101 | 108 | 85 | 83 | 110 | 98 | 118 | 118 | 90 | 110 | 95 | 94 | 100 | 87 | 106 | 96 | 98 | 100.19 | 93.10 |
| Ind | 98 | 100 | 90 | 71 | 101 | 104 | 114 | 116 | 78 | 100 | 104 | 91 | 96 | 89 | 103 | 90 | 90 | 93.87 | 93.60 |
| Ill | 94 | 101 | 90 | 80 | 110 | 110 | 89 | 98 | 70 | 84 | 110 | 95 | 110 | 95 | 106 | 95 | 82 | 88.58 | 90.20 |
| Iowa | 94 | 92 | 75 | 98 | 110 | 98 | 105 | 90 | 80 | 100 | 95 | 113 | 110 | 108 | 150 | 127 | 108 | 112.52 | 102.60 |
| Mo | 88 | 98 | 82 | 91 | 90 | 102 | 91 | 88 | 56 | 84 | 100 | 91 | 105 | 95 | 105 | 96 | 82 | 80.65 | 82.00 |

[1] Based upon farm price Dec. 1.

## SWEET POTATOES—Continued.

TABLE 75.—*Sweet potatoes: Yield per acre, price per bushel Dec. 1, and value per acre, by States*—Continued.

| State. | Yield per acre (bushels). | | | | | | | | | | | Farm price per bushel (cents). | | | | | | Value per acre (dollars).[1] | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 10-year average, 1906-1915. | 1906 | 1907 | 1908 | 1909 | 1910 | 1911 | 1912 | 1913 | 1914 | 1915 | 10-year average, 1906-1915. | 1911 | 1912 | 1913 | 1914 | 1915 | 5-year average, 1910-1914. | 1915 |
| Nebr | 90 | 120 | 93 | 85 | 92 | 90 | 80 | 78 | 64 | 105 | 90 | 126 | 147 | 110 | 140 | 130 | 88 | 112.90 | 79.20 |
| Kans | 95 | 110 | 95 | 105 | 96 | 101 | 75 | 99 | 50 | 110 | 110 | 105 | 130 | 103 | 110 | 106 | 100 | 95.02 | 110.00 |
| Ky | 90 | 90 | 85 | 84 | 88 | 85 | 96 | 90 | 75 | 105 | 105 | 79 | 88 | 85 | 94 | 77 | 70 | 75.22 | 73.50 |
| Tenn | 88 | 80 | 82 | 89 | 87 | 85 | 85 | 90 | 80 | 100 | 105 | 68 | 75 | 72 | 80 | 69 | 59 | 64.04 | 61.95 |
| Ala | 89 | 82 | 80 | 85 | 80 | 85 | 97 | 100 | 95 | 93 | 90 | 65 | 68 | 71 | 67 | 65 | 57 | 63.26 | 51.30 |
| Miss | 92 | 85 | 92 | 92 | 82 | 94 | 85 | 97 | 98 | 90 | 110 | 62 | 62 | 62 | 62 | 63 | 55 | 57.34 | 60.50 |
| La | 88 | 90 | 86 | 86 | 90 | 93 | 90 | 84 | 85 | 87 | 92 | 62 | 60 | 65 | 70 | 64 | 50 | 56.85 | 46.00 |
| Tex | 79 | 96 | 75 | 88 | 50 | 56 | 71 | 75 | 80 | 101 | 98 | 89 | 104 | 104 | 95 | 87 | 70 | 75.24 | 68.60 |
| Okla | 88 | 118 | 85 | 88 | 70 | 70 | 75 | 92 | 64 | 102 | 115 | 101 | 125 | 109 | 104 | 89 | 73 | 85.67 | 83.95 |
| Ark | 92 | 90 | 75 | 100 | 58 | 98 | 92 | 88 | 90 | 95 | 130 | 77 | 82 | 90 | 80 | 77 | 61 | 74.27 | 79.30 |
| N. Mex | 142 | 100 | 200 | 125 | 180 | 100 | 150 | 141 | 125 | 143 | 160 | 123 | 144 | 105 | 130 | 113 | 120 | 161.23 | 192.00 |
| Ariz | 150 | 100 | 150 | 140 | 163 | 120 | 200 | 140 | 135 | 200 | 150 | 151 | 160 | 150 | 170 | 150 | 150 | 245.50 | 225.00 |
| Cal | 143 | 115 | 130 | 105 | 160 | 160 | 140 | 156 | 170 | 161 | 135 | 92 | 110 | 94 | 100 | 87 | 80 | 152.54 | 108.00 |
| U. S. | 93.1 | 90.2 | 88.2 | 92.4 | 90.1 | 93.5 | 90.1 | 95.2 | 94.5 | 93.8 | 103.3 | 69.2 | 75.5 | 72.6 | 72.6 | 73.0 | 62.0 | 67.40 | 64.09 |

[1] Based upon farm price Dec. 1.

TABLE 76.—*Sweet potatoes: Wholesale price per barrel, 1900–1915.*

| Date. | Baltimore. | | St. Louis. | | New Orleans. | | New York. | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Jersey. | | Southern. | |
| | Low. | High. | Low. | High. | Low. | High. | Low. | High. | Low. | High. |
| 1900 | $0.75 | $4.50 | $1.00 | $6.25 | $1.00 | $2.00 | $1.25 | $5.00 | $0.50 | $3.00 |
| 1901 | .50 | 6.00 | .88 | 8.75 | .75 | 1.75 | 1.50 | 4.00 | .50 | 3.25 |
| 1902 | .75 | 5.00 | .63 | 7.50 | 1.25 | 2.75 | 1.50 | 5.25 | .75 | 5.00 |
| 1903 | .75 | 4.00 | .75 | 6.25 | .75 | 2.50 | 1.50 | 4.00 | .50 | 5.00 |
| 1904 | .75 | 5.00 | .88 | 5.50 | .75 | 1.75 | 1.00 | 5.00 | .50 | 4.50 |
| 1905 | .75 | 4.50 | .50 | 5.00 | .50 | 2.00 | 1.25 | 5.50 | .35 | 4.50 |
| 1906 | .60 | 4.25 | .60 | 5.00 | 1.25 | 2.50 | 1.25 | 3.50 | .50 | 4.50 |
| 1907 | 1.00 | 5.00 | .75 | 7.50 | 1.00 | 2.75 | 1.00 | 4.00 | 1.50 | 6.00 |
| 1908 | 1.00 | 5.00 | .88 | 7.50 | 1.00 | 2.75 | 1.50 | 4.50 | 1.00 | 5.00 |
| 1909 | .85 | 5.50 | .38 | 6.25 | .75 | 2.75 | 1.25 | 4.00 | .75 | 4.50 |
| 1910 | 1.00 | 4.00 | .50 | 4.38 | 1.00 | 2.40 | 1.00 | 3.00 | .30 | 5.00 |
| 1911 | 1.25 | 6.25 | 1.25 | 6.25 | 1.00 | 3.00 | 1.50 | 3.75 | 1.00 | 7.00 |
| 1912 | 1.00 | 6.00 | .75 | 5.00 | 1.75 | 2.00 | 1.50 | 3.50 | .50 | 6.00 |
| 1913 | .75 | 7.00 | .88 | 6.25 | 2.00 | 2.00 | 1.25 | 3.50 | .40 | 5.50 |
| 1914 | 1.00 | 5.50 | 1.50 | 4.50 | .80 | 3.50 | 1.50 | 3.50 | .75 | 5.00 |
| 1915. | | | | | | | | | | |
| January | 1.50 | 3.25 | 2.50 | 3.25 | .50 | .60 | 2.50 | 3.00 | ...... | ...... |
| February | 1.50 | 3.50 | 2.50 | 3.00 | .50 | .80 | ...... | ...... | ...... | ...... |
| March | 1.50 | 4.00 | 2.50 | 4.50 | .50 | 1.00 | ...... | ...... | 2.00 | 3.50 |
| April | 1.50 | 5.50 | ...... | ...... | .75 | 1.00 | ...... | ...... | 2.50 | 3.50 |
| May | 4.00 | 5.00 | ...... | ...... | .90 | 1.25 | ...... | ...... | ...... | ...... |
| June | ...... | ...... | ...... | ...... | 1.25 | 1.50 | ...... | ...... | ...... | ...... |
| July | 3.50 | 6.50 | ...... | ...... | 1.25 | 1.50 | ...... | ...... | ...... | ...... |
| August | 2.25 | 4.00 | ...... | ...... | 1.00 | 1.50 | ...... | ...... | 2.00 | 5.00 |
| September | 1.25 | 2.50 | 1.50 | 3.40 | .50 | .90 | ...... | ...... | 1.00 | 3.50 |
| October | 1.00 | 2.00 | 1.90 | 2.40 | .35 | 1.05 | 1.25 | 2.25 | 1.00 | 2.37 |
| November | 1.25 | 2.00 | 1.90 | 2.25 | .35 | .60 | .50 | 2.25 | 1.00 | 2.60 |
| December | .75 | 2.25 | 2.00 | 2.75 | .50 | .80 | 1.75 | 2.50 | .50 | 2.25 |
| Year | .75 | 6.50 | 1.50 | 4.50 | .35 | 1.50 | .50 | 3.00 | .50 | 5.00 |

## HAY.

**Table 77.**—*Hay: Acreage, production, value, exports, etc., in the United States, 1849–1915.*

**Note.**—Figures in *italics* are census returns; figures in roman are estimates of the Department of Agriculture. Estimates of acres are obtained by applying estimated percentages of increase or decrease to the published numbers of the preceding year, except that a revised base is used for applying percentage estimates whenever new census data are available.

| Year. | Acreage. | Average yield per acre. | Production. | Average farm price per ton Dec. 1. | Farm value Dec. 1. | Chicago prices No. 1 timothy per ton, by carload lots. | | | | Domestic exports, fiscal year beginning July 1. |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | December. | | Following May. | | |
| | | | | | | Low. | High. | Low. | High. | |
| | *Acres.* | *Tons.*[1] | *Tons.*[1] | *Dolls.* | *Dollars.* | *Dolls.* | *Dolls.* | *Dolls.* | *Dolls.* | *Tons.*[2] |
| *1849* | ...... | ...... | *13,839,000* | ...... | ...... | ...... | ...... | ...... | ...... | ...... |
| *1859* | ...... | ...... | *19,084,000* | ...... | ...... | ...... | ...... | ...... | ...... | ...... |
| 1866 | 17,669,000 | 1.23 | 21,779,000 | 10.14 | 220,836,000 | ...... | ...... | ...... | ...... | 5,028 |
| 1867 | 20,021,000 | 1.31 | 26,277,000 | 10.21 | 268,301,000 | ...... | ...... | ...... | ...... | 5,645 |
| 1868 | 21,542,000 | 1.21 | 26,142,000 | 10.08 | 263,589,000 | ...... | ...... | ...... | ...... | ...... |
| 1869 | 18,591,000 | 1.42 | 26,420,000 | 10.18 | 268,933,000 | ...... | ...... | ...... | ...... | 6,723 |
| *1869* | ...... | ...... | *27,316,000* | ...... | ...... | ...... | ...... | ...... | ...... | ...... |
| 1870 | 19,862,000 | 1.23 | 24,525,000 | 12.47 | 305,743,000 | ...... | ...... | ...... | ...... | 4,581 |
| 1871 | 19,009,000 | 1.17 | 22,239,000 | 14.30 | 317,940,000 | ...... | ...... | ...... | ...... | 5,266 |
| 1872 | 20,319,000 | 1.17 | 23,813,000 | 12.94 | 308,025,000 | ...... | ...... | ...... | ...... | 4,557 |
| 1873 | 21,894,000 | 1.15 | 25,085,000 | 12.53 | 314,241,000 | ...... | ...... | ...... | ...... | 4,889 |
| 1874 | 21,770,000 | 1.15 | 25,134,000 | 11.94 | 300,222,000 | ...... | ...... | ...... | ...... | 7,183 |
| 1875 | 23,508,000 | 1.19 | 27,874,000 | 10.78 | 300,378,000 | ...... | ...... | ...... | ...... | 7,528 |
| 1876 | 25,283,000 | 1.22 | 30,867,000 | 8.97 | 276,991,000 | ...... | ...... | 9.00 | 10.00 | 7,287 |
| 1877 | 25,368,000 | 1.25 | 31,629,000 | 8.37 | 264,880,000 | 9.50 | 10.50 | 9.75 | 10.75 | 9,514 |
| 1878 | 26,931,000 | 1.47 | 39,608,000 | 7.20 | 285,016,000 | 8.00 | 8.50 | 9.00 | 11.50 | 8,127 |
| 1879 | 27,485,000 | 1.29 | 35,493,000 | 9.32 | 330,804,000 | 14.00 | 14.50 | 14.00 | 15.00 | 13,739 |
| *1879* | *30,631,000* | *1.15* | *35,151,000* | ...... | ...... | ...... | ...... | ...... | ...... | ...... |
| 1880 | 25,864,000 | 1.23 | 31,925,000 | 11.65 | 371,811,000 | 15.00 | 15.50 | 17.00 | 19.00 | 12,662 |
| 1881 | 30,889,000 | 1.14 | 35,135,000 | 11.82 | 415,131,000 | 16.00 | 16.50 | 15.00 | 16.50 | 10,570 |
| 1882 | 32,340,000 | 1.18 | 38,138,000 | 9.73 | 371,170,000 | 11.50 | 12.25 | 12.00 | 13.00 | 13,309 |
| 1883 | 35,516,000 | 1.32 | 46,864,000 | 8.19 | 383,834,000 | 9.00 | 10.00 | 12.50 | 17.00 | 16,908 |
| 1884 | 38,572,000 | 1.26 | 48,470,000 | 8.17 | 396,139,000 | 10.00 | 11.50 | 15.50 | 17.50 | 11,142 |
| 1885 | 39,850,000 | 1.12 | 44,732,000 | 8.71 | 389,753,000 | 11.00 | 12.00 | 10.00 | 12.00 | 13,390 |
| 1886 | 36,502,000 | 1.15 | 41,796,000 | 8.46 | 353,438,000 | 9.50 | 10.50 | 11.00 | 12.50 | 13,873 |
| 1887 | 37,665,000 | 1.10 | 41,454,000 | 9.97 | 413,440,000 | 13.50 | 14.50 | 17.00 | 21.00 | 18,198 |
| 1888 | 38,592,000 | 1.21 | 46,643,000 | 8.76 | 408,500,000 | 11.00 | 11.50 | 10.50 | 21.00 | 21,928 |
| 1889 | 52,949,000 | 1.26 | 66,831,000 | 7.04 | 470,394,000 | 9.00 | 10.00 | 9.00 | 14.00 | 36,274 |
| *1889* | *52,949,000* | *1.26* | *66,831,000* | ...... | ...... | ...... | ...... | ...... | ...... | ...... |
| 1890 | 50,713,000 | 1.19 | 60,198,000 | 7.87 | 473,570,000 | 9.00 | 10.50 | 12.50 | 15.50 | 28,066 |
| 1891 | 51,044,000 | 1.19 | 60,818,000 | 8.12 | 494,114,000 | 12.50 | 15.00 | 13.50 | 14.00 | 35,201 |
| 1892 | 50,853,000 | 1.18 | 59,824,000 | 8.20 | 490,428,000 | 11.00 | 11.50 | 12.00 | 13.50 | 33,084 |
| 1893 | 49,613,000 | 1.33 | 65,766,000 | 8.68 | 570,883,000 | 10.00 | 10.50 | 10.00 | 10.50 | 54,446 |
| 1894 | 48,321,000 | 1.14 | 54,874,000 | 8.54 | 468,578,000 | 10.00 | 11.00 | 10.00 | 10.25 | 47,117 |
| 1895 | 44,206,000 | 1.06 | 47,079,000 | 8.35 | 393,186,000 | 12.00 | 12.50 | 11.50 | 12.00 | 59,052 |
| 1896 | 43,260,000 | 1.37 | 59,282,000 | 6.55 | 388,146,000 | 8.00 | 8.50 | 8.50 | 9.00 | 61,658 |
| 1897 | 42,427,000 | 1.43 | 60,665,000 | 6.62 | 401,391,000 | 8.00 | 8.50 | 9.50 | 10.50 | 81,827 |
| 1898 | 42,781,000 | 1.55 | 66,377,000 | 6.00 | 398,061,000 | 8.00 | 8.25 | 9.50 | 10.50 | 64,916 |
| 1899 | 41,328,000 | 1.37 | 56,656,000 | 7.27 | 411,926,000 | 10.50 | 11.50 | 10.50 | 12.50 | 72,716 |
| *1899* | *52,351,000* | *1.09* | *57,002,000* | ...... | ...... | ...... | ...... | ...... | ...... | ...... |
| 1900 | 39,133,000 | 1.28 | 50,111,000 | 8.89 | 445,539,000 | 11.50 | 14.00 | 12.50 | 13.50 | 89,364 |
| 1901 | 39,391,000 | 1.28 | 50,591,000 | 10.01 | 506,192,000 | 13.00 | 13.50 | 12.50 | 13.50 | 153,431 |
| 1902 | 39,825,000 | 1.50 | 59,858,000 | 9.06 | 542,036,000 | 12.00 | 12.50 | 13.50 | 15.00 | 50,974 |
| 1903 | 39,934,000 | 1.54 | 61,306,000 | 9.07 | 556,276,000 | 10.00 | 12.00 | 12.00 | 15.00 | 60,730 |
| 1904 | 39,999,000 | 1.52 | 60,696,000 | 8.72 | 529,108,000 | 10.50 | 11.50 | 11.00 | 12.00 | 66,557 |
| 1905 | 39,362,000 | 1.54 | 60,532,000 | 8.52 | 515,960,000 | 10.00 | 12.00 | 11.50 | 12.50 | 70,172 |
| 1906 | 42,476,000 | 1.35 | 57,146,000 | 10.37 | 592,540,000 | 15.50 | 18.00 | 15.50 | 20.50 | 58,602 |
| 1907 | 44,028,000 | 1.45 | 63,677,000 | 11.68 | 743,507,000 | 13.00 | 17.50 | 13.00 | 14.00 | 77,281 |
| 1908 | 46,486,000 | 1.52 | 70,798,000 | 8.98 | 635,423,000 | 11.50 | 12.00 | 12.00 | 13.00 | 64,641 |
| 1909 | 45,744,000 | 1.42 | 64,938,000 | ...... | ...... | ...... | ...... | ...... | ...... | ...... |
| *1909* | *51,041,000* | *1.35* | *68,833,000* | 10.50 | 722,401,000 | 16.00 | 17.00 | 12.50 | 16.00 | 55,007 |
| 1910[3] | 51,015,000 | 1.36 | 69,378,000 | 12.14 | 842,252,000 | 16.00 | 19.00 | 18.50 | 23.50 | 55,2[illegible] |
| 1911 | 48,240,000 | 1.14 | 54,916,000 | 14.29 | 784,926,000 | 20.00 | 22.00 | 24.00 | 29.00 | 59,7[illegible] |
| 1912 | 49,530,000 | 1.47 | 72,691,000 | 11.79 | 856,695,000 | 13.00 | 18.00 | 14.00 | 16.50 | 60,720 |
| 1913 | 48,954,000 | 1.31 | 64,116,000 | 12.43 | 797,077,000 | 14.50 | 18.00 | 15.00 | 17.50 | 50,151 |
| 1914 | 49,145,000 | 1.43 | 70,071,000 | 11.12 | 779,068,000 | 15.00 | 16.00 | 16.50 | 17.50 | 105,508 |
| 1915 | 50,872,000 | 1.68 | 85,225,000 | 10.70 | 912,320,000 | 14.50 | 16.50 | ...... | ...... | ...... |

[1] 2,000 pounds.

[2] 2,240 pounds.

[3] Figures adjusted to census basis.

## HAY—Continued.

**TABLE 78.**—*Hay: Acreage, production, and total farm value, by States, 1915.*

[000 omitted.]

| State. | Acreage. | Production. | Farm value Dec. 1. | State. | Acreage. | Production. | Farm value Dec 1. |
|---|---|---|---|---|---|---|---|
| | *Acres.* | *Tons.* | *Dollars.* | | *Acres.* | *Tons.* | *Dollars.* |
| Maine | 1,215 | 1,397 | 20,815 | North Dakota | 440 | 660 | 3,762 |
| New Hampshire | 504 | 504 | 8,770 | South Dakota | 610 | 1,220 | 6,466 |
| Vermont | 970 | 1,310 | 20,305 | Nebraska | 1,650 | 4,290 | 24,882 |
| Massachusetts | 470 | 705 | 15,510 | Kansas | 1,766 | 4,062 | 22,747 |
| Rhode Island | 57 | 71 | 1,598 | Kentucky | 875 | 1,225 | 15,313 |
| Connecticut | 365 | 493 | 9,860 | Tennessee | 950 | 1,396 | 19,404 |
| New York | 4,500 | 5,850 | 91,845 | Alabama | 250 | 362 | 4,489 |
| New Jersey | 361 | 523 | 9,937 | Mississippi | 250 | 350 | 3,850 |
| Pennsylvania | 3,100 | 4,340 | 67,704 | Louisiana | 250 | 438 | 4,511 |
| Delaware | 70 | 84 | 1,428 | Texas | 450 | 765 | 6,044 |
| Maryland | 390 | 468 | 7,582 | Oklahoma | 460 | 1,058 | 5,925 |
| Virginia | 700 | 945 | 14,836 | Arkansas | 350 | 560 | 5,768 |
| West Virginia | 730 | 1,095 | 16,425 | Montana | 775 | 1,550 | 11,625 |
| North Carolina | 350 | 648 | 10,692 | Wyoming | 550 | 1,210 | 9,438 |
| South Carolina | 220 | 286 | 4,462 | Colorado | 970 | 2,134 | 16,218 |
| Georgia | 300 | 345 | 5,210 | New Mexico | 201 | 442 | 3,890 |
| Florida | 51 | 61 | 976 | Arizona | 147 | 470 | 4,512 |
| Ohio | 2,812 | 4,049 | 51,422 | Utah | 394 | 985 | 7,880 |
| Indiana | 2,020 | 3,030 | 33,330 | Nevada | 225 | 675 | 5,063 |
| Illinois | 2,400 | 3,696 | 39,917 | | | | |
| Michigan | 2,470 | 3,458 | 42,188 | Idaho | 677 | 1,828 | 14,078 |
| Wisconsin | 2,576 | 4,508 | 44,629 | Washington | 812 | 1,868 | 20,174 |
| Minnesota | 1,680 | 3,209 | 20,538 | Oregon | 850 | 1,870 | 17,765 |
| Iowa | 3,098 | 5,576 | 48,511 | California | 2,511 | 4,520 | 50,624 |
| Missouri | 3,050 | 4,636 | 39,406 | United States. | 50,872 | 85,225 | 912,320 |

**TABLE 79.**—*Hay: Yield per acre, price per ton Dec. 1, and value per acre, by States.*

| State. | Average yield per acre (tons). | | | | | | | | | | | Farm price per ton (dollars). | | | | | | Value per acre (dollars).[1] | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 10-year average, 1906-1915. | 1906 | 1907 | 1908 | 1909 | 1910 | 1911 | 1912 | 1913 | 1914 | 1915 | 10-year average, 1906-1915. | 1911 | 1912 | 1913 | 1914 | 1915 | 5-year average, 1910-1914. | 1915 |
| Me | 1.14 | 1.20 | 1.50 | 0.90 | 0.95 | 1.25 | 1.10 | 1.16 | 1.00 | 1.15 | 1.15 | 13.42 | 14.40 | 13.70 | 13.90 | 13.10 | 14.90 | 15.34 | 17.14 |
| N. H | 1.10 | 1.15 | 1.35 | .92 | .97 | 1.20 | 1.05 | 1.25 | 1.00 | 1.15 | 1.00 | 16.18 | 17.20 | 15.00 | 17.20 | 17.00 | 17.40 | 18.50 | 17.40 |
| Vt | 1.31 | 1.20 | 1.60 | 1.11 | 1.25 | 1.35 | 1.30 | 1.50 | 1.28 | 1.20 | 1.35 | 13.60 | 14.00 | 14.00 | 14.50 | 14.60 | 15.50 | 18.40 | 20.93 |
| Mass | 1.26 | 1.31 | 1.30 | 1.20 | 1.15 | 1.28 | 1.08 | 1.25 | 1.21 | 1.32 | 1.50 | 20 01 | 23.00 | 21.50 | 21.10 | 21.50 | 22.00 | 26.02 | 33.00 |
| R. I | 1.19 | 1.06 | 1.35 | 1.50 | 1.10 | 1.18 | 1.00 | 1.13 | 1.17 | 1.17 | 1.24 | 20.20 | 24.10 | 22.20 | 21.20 | 20.20 | 22.50 | 24.15 | 27.90 |
| Conn | 1.22 | 1.17 | 1.30 | 1.20 | 1.15 | 1.35 | 1.10 | 1.15 | 1.14 | 1.25 | 1.35 | 19.16 | 23.50 | 22.50 | 20.10 | 19.50 | 20.00 | 24.93 | 27.00 |
| N. Y | 1.20 | 1.28 | 1.25 | 1.20 | 1.05 | 1.32 | 1.02 | 1.25 | 1.14 | 1.20 | 1.30 | 14.62 | 17.90 | 14.90 | 15.30 | 14.60 | 15.70 | 17.98 | 20.41 |
| N. J | 1.37 | 1.32 | 1.45 | 1.60 | 1.25 | 1.50 | 1.05 | 1.44 | 1.30 | 1.35 | 1.45 | 18.12 | 22.00 | 20.00 | 19.00 | 19.50 | 19.00 | 26.04 | 27.55 |
| Pa | 1.33 | 1.30 | 1.45 | 1.50 | 1.20 | 1.38 | 1.00 | 1.43 | 1.32 | 1.28 | 1.40 | 15.14 | 20.00 | 15.60 | 14.90 | 14.50 | 15.60 | 20.25 | 21.84 |
| Del | 1.29 | 1.25 | 1.40 | 1.60 | 1.40 | 1.43 | .88 | 1.33 | 1.30 | 1.10 | 1.20 | 16.20 | 22.50 | 15.00 | 15.70 | 17.00 | 17.00 | 20.00 | 20.40 |
| Md | 1.26 | 1.26 | 1.40 | 1.60 | 1.20 | 1.35 | .72 | 1.51 | 1.26 | 1.15 | 1.20 | 15.48 | 22.40 | 14.40 | 15.20 | 15.30 | 16.20 | 19.08 | 19.44 |
| Va | 1.16 | 1.25 | 1.40 | 1.30 | 1.30 | 1.19 | .64 | 1.20 | 1.27 | .72 | 1.35 | 15.54 | 20.50 | 15.20 | 15.50 | 17.20 | 15.70 | 16.14 | 21.20 |
| W. Va | 1.25 | 1.40 | 1.45 | 1.45 | 1.25 | 1.20 | .66 | 1.38 | 1.25 | .92 | 1.50 | 15.09 | 20.00 | 15.00 | 14.90 | 17.20 | 15.00 | 17.27 | 22.50 |
| N. C | 1.41 | 1.54 | 1.50 | 1.50 | 1.38 | 1.50 | 1.05 | 1.30 | 1.31 | 1.15 | 1.85 | 15.78 | 17.00 | 16.70 | 16.50 | 17.10 | 16.50 | 20.55 | 30.52 |
| S. C | 1.25 | 1.46 | 1.50 | 1.25 | 1.23 | 1.25 | 1.08 | 1.15 | 1.10 | 1.15 | 1.30 | 16.44 | 17.00 | 18.00 | 18.70 | 17.00 | 15.60 | 20.06 | 20.28 |
| Ga | 1.45 | 1.65 | 1.75 | 1.75 | 1.35 | 1.40 | 1.35 | 1.35 | 1.40 | 1.35 | 1.15 | 16.85 | 17.00 | 17.00 | 17.90 | 16.20 | 15.10 | 23.16 | 17.36 |
| Fla | 1.34 | 1.50 | 1.35 | 1.35 | 1.38 | 1.33 | 1.30 | 1.25 | 1.35 | 1.35 | 1.20 | 16.88 | 18.50 | 18.10 | 18.20 | 17.20 | 16.00 | 23.41 | 19.20 |
| Ohio | 1.32 | 1.22 | 1.45 | 1.53 | 1.43 | 1.39 | .98 | 1.36 | 1.30 | 1.13 | 1.44 | 12.66 | 18.90 | 13.00 | 12.80 | 13.40 | 12.70 | 17.07 | 18.29 |
| Ind | 1.25 | 1.10 | 1.85 | 1.50 | 1.40 | 1.30 | .94 | 1.37 | 1.00 | 1.00 | 1.50 | 12.31 | 16.80 | 11.40 | 14.10 | 14.10 | 11.00 | 15.02 | 16.50 |
| Ill | 1.22 | .98 | 1.40 | 1.53 | 1.45 | 1.33 | .82 | 1.30 | .98 | .85 | 1.54 | 12.85 | 17.00 | 12.60 | 14.10 | 14.40 | 10.80 | 14.47 | 16.63 |

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[1] Based upon farm price Dec. 1.

## HAY—Continued.

TABLE 79.—*Hay: Yield per acre, price per ton Dec. 1, and value per acre, by States*—Continued.

| State. | Average yield per acre (tons). | | | | | | | | | | | Farm price per ton (dollars). | | | | | | Value per acre (dollars).[1] | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 10-year average, 1906-1915. | 1906 | 1907 | 1908 | 1909 | 1910 | 1911 | 1912 | 1913 | 1914 | 1915 | 10-year average, 1906-1915. | 1911 | 1912 | 1913 | 1914 | 1915 | 5-year average, 1910-1914. | 1915 |
| Mich | 1.28 | 1.28 | 1.25 | 1.45 | 1.30 | 1.30 | 1.16 | 1.33 | 1.05 | 1.28 | 1.40 | 12.36 | 17.00 | 12.70 | 13.10 | 12.00 | 12.20 | 16.68 | 17.08 |
| Wis | 1.48 | 1.35 | 1.35 | 1.70 | 1.53 | 1.00 | 1.20 | 1.60 | 1.62 | 1.75 | 1.75 | 11.12 | 15.60 | 12.10 | 11.10 | 9.30 | 9.90 | 17.49 | 17.33 |
| Minn | 1.57 | 1.70 | 1.70 | 1.68 | 1.75 | 1.00 | 1.00 | 1.53 | 1.50 | 1.89 | 1.91 | 7.09 | 11.90 | 6.40 | 6.60 | 6.10 | 6.40 | 10.44 | 12.22 |
| Iowa | 1.40 | 1.35 | 1.40 | 1.70 | 1.64 | 1.05 | .80 | 1.40 | 1.48 | 1.38 | 1.80 | 8.78 | 12.50 | 9.50 | 9.60 | 10.10 | 8.70 | 12.31 | 15.66 |
| Mo | 1.10 | .78 | 1.40 | 1.50 | 1.35 | 1.30 | .60 | 1.30 | .60 | .70 | 1 52 | 10.34 | 13.30 | 9.80 | 14.50 | 13.60 | 8.50 | 10.18 | 12.92 |
| N. Dak | 1.26 | 1.45 | 1.30 | 1.30 | 1.37 | .55 | 1.10 | 1.40 | 1.14 | 1.45 | 1.50 | 5.76 | 7.00 | 5.50 | 5.80 | 5.20 | 5.70 | 6.75 | 8.55 |
| S. Dak | 1.36 | 1.50 | 1.40 | 1.50 | 1.50 | .80 | .55 | 1.46 | 1.20 | 1.70 | 2.00 | 5.84 | 8.50 | 6.10 | 6.50 | 5.70 | 5.30 | 7.35 | 10.60 |
| Nebr | 1.48 | 1.40 | 1.50 | 1.55 | 1.50 | 1.00 | .85 | 1.35 | 1.34 | 1.69 | 2.60 | 7.12 | 9.70 | 8.40 | 8.70 | 6.90 | 5.80 | 10.36 | 15.08 |
| Kans | 1.36 | 1.28 | 1.15 | 1.50 | 1.45 | 1.15 | .85 | 1.50 | .90 | 1.51 | 2.30 | 7.60 | 9.90 | 7.60 | 12.50 | 7.40 | 5.60 | 10.24 | 12.88 |
| Ky | 1.21 | 1.35 | 1.35 | 1.35 | 1.36 | 1.29 | .95 | 1.23 | .87 | .95 | 1.40 | 13.88 | 17.30 | 13.70 | 16.50 | 16.00 | 12.50 | 15.95 | 17.50 |
| Tenn | 1.36 | 1.51 | 1.50 | 1.50 | 1.50 | 1.40 | 1.00 | 1.30 | 1.21 | 1.20 | 1.47 | 14.60 | 16.70 | 15.80 | 16.20 | 17.00 | 13.90 | 19.20 | 20.43 |
| Ala | 1.50 | 1.95 | 1.80 | 1.60 | 1.50 | 1.43 | 1.40 | 1.25 | 1.36 | 1.31 | 1.45 | 13.56 | 12.80 | 14.60 | 14.20 | 13.80 | 12.40 | 18.49 | 17.98 |
| Miss | 1.50 | 1.90 | 1.60 | 1.50 | 1.47 | 1.42 | 1.50 | 1.48 | 1.33 | 1.45 | 1.40 | 11.92 | 11.00 | 12.50 | 13.50 | 12.00 | 11.00 | 17.54 | 15.40 |
| La | 1.67 | 1.93 | 2.00 | 1.40 | 1.50 | 1.75 | 1.30 | 1.65 | 1.50 | 1.90 | 1.75 | 11.92 | 12.00 | 12.70 | 12.50 | 12.00 | 10.30 | 19.65 | 18.02 |
| Tex | 1.39 | 1.80 | 1.30 | 1.65 | .95 | 1.15 | 1.00 | 1.40 | 1.16 | 1.75 | 1.70 | 10.32 | 11.90 | 10.40 | 11.80 | 9.80 | 7.90 | 14.22 | 13.43 |
| Okla | 1.23 | 1.40 | 1.20 | 1.45 | .90 | 1.05 | .80 | 1.25 | .85 | 1.13 | 2.30 | 7.22 | 8.00 | 7.40 | 10.40 | 7.90 | 5.60 | 8.45 | 12.88 |
| Ark | 1.32 | 1.60 | 1.25 | 1.50 | 1.25 | 1.35 | 1.15 | 1.23 | 1.20 | 1.05 | 1.60 | 11.49 | 13.00 | 12.00 | 13.50 | 12.90 | 10.30 | 14.86 | 16.48 |
| Mont | 1.89 | 1.85 | 1.70 | 2.00 | 1.79 | 1.40 | 2.00 | 1.90 | 1.80 | 2.50 | 2.00 | 9.34 | 10.00 | 8.30 | 9.60 | 8.70 | 7.50 | 18.46 | 15.00 |
| Wyo | 2.16 | 2.25 | 2.10 | 2.00 | 2.40 | 2.40 | 2.10 | 1.90 | 1.90 | 2.30 | 2.20 | 8.50 | 10.30 | 8.60 | 6.70 | 7.50 | 7.80 | 19.59 | 17.16 |
| Colo | 2.30 | 2.50 | 2.70 | 2.50 | 2.50 | 2.00 | 2.00 | 2.19 | 2.05 | 2.40 | 2.20 | 9.16 | 9.30 | 8.70 | 10.00 | 7.40 | 7.60 | 19.50 | 16.72 |
| N. Mex | 2.30 | 2.50 | 2.05 | 2.00 | 2.60 | 2.10 | 2.60 | 2.33 | 2.08 | 2.50 | 2.20 | 10.63 | 13.00 | 8.50 | 12.10 | 9.30 | 8.80 | 25.23 | 19.36 |
| Ariz | 3.27 | 3.50 | 2.90 | 3.20 | 3.30 | 2.10 | 3.86 | 3.40 | 4.00 | 3.20 | 3.20 | 11.74 | 12.00 | 12.00 | 11.00 | 8.80 | 9.60 | 37.32 | 30.72 |
| Utah | 2.74 | 4.00 | 2.10 | 2.50 | 2.90 | 3.00 | 2.50 | 2.78 | 2.33 | 2.75 | 2.50 | 8.17 | 9.00 | 8.00 | 9.10 | 7.70 | 8.00 | 22.82 | 20.00 |
| Nev | 2.64 | 1.50 | 1.75 | 2.00 | 2.35 | 3.40 | 3.40 | 3.00 | 2.75 | 3.25 | 3.00 | 9.31 | 9.50 | 8.70 | 11.00 | 8.30 | 7.50 | 30.47 | 22.50 |
| Idaho | 2.86 | 2.95 | 2.40 | 3.25 | 2.85 | 3.00 | 3.10 | 2.80 | 2.90 | 2.65 | 2.70 | 7.78 | 7.60 | 6.30 | 7.20 | 7.30 | 7.70 | 21.68 | 20.79 |
| Wash | 2.23 | 2.38 | 2.10 | 2.25 | 2.10 | 2.10 | 2.40 | 2.20 | 2.30 | 2.20 | 2.30 | 12.15 | 12.00 | 10.10 | 10.90 | 11.00 | 10.80 | 26.65 | 24.84 |
| Oreg | 2.09 | 2.18 | 2.00 | 2.00 | 2.05 | 2.10 | 2.10 | 2.20 | 2.10 | 2.00 | 2.20 | 9.68 | 9.60 | 8.30 | 9.00 | 9.20 | 9.50 | 20.23 | 20.90 |
| Cal | 1.70 | 1.85 | 1.75 | 1.35 | 1.70 | 1.83 | 1.75 | 1.53 | 1.50 | 1.95 | 1.80 | 11.56 | 10.90 | 13.70 | 13.50 | 8.20 | 11.20 | 18.77 | 20.16 |
| U. S. | 1.41 | 1.35 | 1.45 | 1.52 | 1.42 | 1.36 | 1.14 | 1.47 | 1.31 | 1.43 | 1.68 | 11.41 | 14.29 | 11.79 | 12.43 | 11.12 | 10.70 | 16.44 | 17.98 |

[1] Based upon farm price Dec. 1.

TABLE 80.—*Hay: Farm price per ton on first of each month, by geographical divisions, 1914 and 1915.*

| Month. | United States. | | North Atlantic States. | | South Atlantic States. | | N. Central States east of Miss. R. | | N Central States west of Miss. R. | | South Central States. | | Far Western States. | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1915 | 1914 | 1915 | 1914 | 1915 | 1914 | 1915 | 1914 | 1915 | 1914 | 1915 | 1914 | 1915 | 1914 |
| | *Dolls.* | *Dolls.* | *Dolls.* | *Dolls.* | *Dolls.* | *Dolls.* | *Dolls.* | *Dolls.* | *Dolls.* | *Dolls.* | *Dolls.* | *Dolls.* | *Dolls.* | *Dolls.* |
| January | 11.29 | 12.42 | 15.39 | 15.46 | 16.97 | 16.05 | 12.17 | 12.68 | 8.80 | 9.68 | 13 06 | 14.51 | 8.30 | 10.32 |
| February | 11.69 | 12.41 | 15.94 | 15.34 | 17.15 | 15.91 | 12.43 | 12.30 | 9.09 | 9.54 | 13.50 | 15.09 | 8.84 | 10.73 |
| March | 11.71 | 12.37 | 15.79 | 15.20 | 17.69 | 16.51 | 12.57 | 12.06 | 9.38 | 9.58 | 13.72 | 15.24 | 8.53 | 10.68 |
| April | 11.74 | 12.20 | 15.41 | 15.20 | 17.79 | 16.64 | 12.39 | 12.01 | 9.72 | 9.58 | 13.95 | 15.38 | 8.74 | 9.97 |
| May | 11.82 | 12.32 | 15.59 | 15.52 | 18.35 | 16.66 | 12.62 | 12.40 | 9.66 | 9.77 | 13.97 | 15.33 | 8.70 | 9.68 |
| June | 11.96 | 12.34 | 15.74 | 15.54 | 18.38 | 16.55 | 12.73 | 12.50 | 9.57 | 9.98 | 13.90 | 15.44 | 9.08 | 9.43 |
| July | 11.70 | 12.01 | 16.40 | 15.49 | 17.90 | 16.96 | 12.66 | 12.27 | 8.74 | 9.41 | 13.34 | 14.42 | 8.55 | 8.96 |
| August | 11.02 | 11.52 | 16.64 | 14.85 | 16.57 | 16.91 | 11.31 | 12.16 | 7.59 | 8.85 | 11.98 | 14 44 | 8.32 | 8.11 |
| September | 10.80 | 11.91 | 16.64 | 15.43 | 16.20 | 17.13 | 11.04 | 12.82 | 7.19 | 9.04 | 11.41 | 14.62 | 8.19 | 8.22 |
| October | 10.69 | 11.77 | 16.22 | 15.06 | 15.85 | 16.91 | 11.00 | 12.86 | 7.07 | 9.07 | 11.00 | 14.12 | 8.40 | 8.21 |
| November | 10.83 | 11.57 | 16.16 | 14.83 | 15.85 | 16.76 | 11.00 | 12.40 | 7.11 | 8.82 | 10.73 | 13.80 | 9.00 | 8.30 |
| December | 10.70 | 11.12 | 16.21 | 15.18 | 15.67 | 16.71 | 11.28 | 12.05 | 7.03 | 8.30 | 10.61 | 13.09 | 9.19 | 8.39 |

## HAY—Continued.

### TABLE 81.—*Hay: Wholesale price (baled) per ton, 1900–1915.*

| Date. | Chicago. | | Cincinnati. | | St. Louis. | | New York. | | San Francisco. | |
|---|---|---|---|---|---|---|---|---|---|---|
| | No. 1 timothy. | | No. 1 timothy. | | No. 1 timothy. | | No. 1 timothy.[1] | | No. 1 wheat, light bales. | |
| | Low. | High. | Low. | High. | Low. | High. | Low. | High. | Low. | High. |
| 1900 | $10.00 | $14.00 | $11.50 | $15.00 | $9.75 | $14.50 | $0.87½ | $0.97½ | $6.50 | $13.50 |
| 1901 | 11.50 | 15.00 | 11.50 | 15.50 | 11.50 | 17.50 | .87½ | 1.00 | 8.50 | 13.50 |
| 1902 | 10.00 | 17.50 | 11.00 | 16.50 | 9.50 | 16.00 | 17.00 | 22.00 | 9.00 | 16.00 |
| 1903 | 10.00 | 15.00 | 11.50 | 19.50 | 9.50 | 25.00 | 16.00 | 26.00 | 10.00 | 16.00 |
| 1904 | 9.00 | 15.00 | 11.00 | 15.50 | 10.00 | 13.50 | 15.00 | 19.00 | 9.00 | 18.00 |
| 1905 | 10.00 | 12.50 | 10.00 | 13.50 | 9.00 | 15.50 | 14.00 | 19.00 | 8.00 | 16.50 |
| 1906 | 9.50 | 18.00 | 11.00 | 19.50 | 11.00 | 20.00 | 15.00 | 23.00 | 9.50 | 23.00 |
| 1907 | 13.00 | 21.50 | 14.00 | 22.75 | 14.00 | 24.00 | 1.00 | 1.25 | 10.00 | 26.00 |
| 1908 | 10.00 | 14.00 | 11.50 | 16.50 | 10.00 | 18.00 | 14.00 | 21.00 | 11.00 | 22.50 |
| 1909 | 11.00 | 17.00 | 12.00 | 17.25 | 11.50 | 18.50 | 15.50 | 21.00 | 12.50 | 28.00 |
| 1910 | 12.50 | 21.00 | 17.00 | 22.50 | 15.00 | 20.50 | 21.00 | 28.00 | 7.50 | 19.00 |
| 1911 | 15.00 | 25.00 | 18.00 | 26.50 | 14.50 | 29.00 | 20.50 | 30.00 | 7.50 | 20.00 |
| 1912 | 13.00 | 28.00 | 15.50 | 31.00 | 13.00 | 31.00 | 21.50 | 32.00 | 13.00 | 25.00 |
| 1913 | 13.00 | 19.50 | 14.00 | 21.00 | 12.00 | 24.00 | 19.50 | 23.00 | 16.00 | 26.00 |
| 1914 | 13.00 | 18.50 | 17.50 | 21.50 | 14.50 | 23.00 | 18.50 | 25.00 | 11.00 | 21.00 |
| 1915. | | | | | | | | | | |
| January | 15.00 | 17.50 | 18.00 | 19.25 | 17.00 | 19.50 | 21.00 | 22.50 | 11.00 | 12.00 |
| February | 15.00 | 16.00 | 18.00 | 19.00 | 16.00 | 21.00 | 20.50 | 21.50 | 11.00 | 12.00 |
| March | 14.50 | 16.00 | 18.00 | 19.50 | 17.50 | 22.00 | 18.00 | 22.00 | 11.00 | 12.00 |
| April | 14.50 | 18.00 | 18.00 | 20.00 | 18.00 | 21.00 | 20.50 | 22.50 | 11.00 | 12.50 |
| May | 16.50 | 17.50 | 19.00 | 21.00 | 18.00 | 22.00 | 22.00 | 25.00 | 11.50 | 12.50 |
| June | 17.00 | 18.00 | 19.00 | 22.00 | 17.00 | 20.50 | 23.50 | 25.00 | 11.50 | 14.00 |
| July | 17.50 | 21.00 | 18.00 | 22.50 | 12.50 | 24.00 | 24.00 | 29.00 | 13.00 | 14.50 |
| August | 12.00 | 21.00 | 16.00 | 23.00 | 12.00 | 23.00 | 26.00 | 31.50 | 13.50 | 14.50 |
| September | 14.00 | 17.00 | 16.00 | 19.00 | 12.00 | 18.00 | 24.50 | 26.00 | 13.50 | 16.00 |
| October | 14.00 | 18.00 | 13.00 | 21.00 | 13.00 | 18.00 | 24.00 | 26.00 | 14.50 | 18.00 |
| November | 14.50 | 16.50 | 18.50 | 19.50 | 13.00 | 18.00 | 25.00 | 26.00 | 17.00 | 18.00 |
| December | 14.50 | 16.50 | 18.00 | 20.00 | 14.00 | 19.00 | 24.00 | 26.00 | 17.00 | 18.00 |
| Year | 12.00 | 21.00 | 13.00 | 23.00 | 12.00 | 24.00 | 18.00 | 31.50 | 11.00 | 18.00 |

[1] Per hundred pounds, 1900, 1901, and 1907.

## CLOVER AND TIMOTHY SEED.

**Table 82.**—*Clover and timothy seed: Wholesale price, 1900–1915.*

| Date. | Clover (bushels of 60 pounds). | | | | | | | | Timothy. | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Cincinnati. | | Chicago. | | Toledo. | | Detroit. | | Cincinnati. | | Chicago. | | Milwaukee. | | St. Louis. | |
| | Prime. | | Poor to prime.[1] | | Poor to choice.[2] | | | | Per bushel (of 45 pounds). | | Poor to choice (per 100 pounds).[3] | | Per 100 pounds. | | Poor to prime (per 100 pounds). | |
| | Low. | High. | Low. | High. | Low. | High. | Low. | High. | Low. | High. | Low. | High. | Low. | High. | Low. | High. |
| 1900 | $4.00 | $6.00 | $2.40 | $6.30 | $4.95 | $7.85 | $4.80 | $7.10 | $1.03 | $2.00 | $2.32½ | $4.65 | $1.90 | $4.50 | ..... | ..... |
| 1901 | 4.50 | 6.60 | 2.40 | 6.90 | 5.15 | 7.40 | 5.15 | 7.35 | 1.70 | 2.90 | 3.35 | 6.55 | 3.00 | 6.25 | ..... | ..... |
| 1902 | 4.11 | 5.76 | 2.40 | 6.81 | 3.90 | 7.10 | 4.90 | 6.10 | 1.98 | 3.96 | 2.00 | 7.35 | 2.50 | 6.75 | $2.40 | $6.40 |
| 1903 | 5.00 | 7.10 | 2.40 | 7.50 | 3.05 | 7.70 | 6.45 | 7.50 | 1.20 | 1.70 | 1.75 | 4.35 | 2.00 | 3.75 | 2.00 | 3.60 |
| 1904 | 4.80 | 7.50 | 3.60 | 7.80 | 2.50 | 7.95 | 6.20 | 7.95 | 1.15 | 1.35 | 1.75 | 3.25 | 2.00 | 3.15 | 2.00 | 2.80 |
| 1905 | 5.70 | 7.75 | 4.80 | 8.64 | 3.00 | 8.85 | 6.30 | 8.75 | 1.15 | 1.60 | 1.50 | 3.75 | 2.25 | 3.50 | 2.00 | 3.70 |
| 1906 | 4.50 | 7.50 | 3.90 | 8.49 | 3.00 | 8.72½ | 6.25 | 8.70 | 1.30 | 1.85 | 2.00 | 4.50 | 2.40 | 4.25 | 2.40 | 4.00 |
| 1907 | 7.00 | 8.50 | 4.80 | 10.20 | 3.00 | 11.00 | 8.00 | 10.75 | 1.50 | 2.25 | 3.00 | 4.75 | 3.25 | 4.65 | 3.00 | 4.60 |
| 1908 | 4.00 | 11.00 | 3.60 | 14.40 | 3.90 | 13.55 | 4.60 | 13.00 | 1.35 | 2.15 | 3.25 | 4.85 | 2.50 | 4.60 | 2.00 | 4.50 |
| 1909 | 4.00 | 8.50 | 4.20 | 9.00 | 5.17½ | 9.55 | 5.20 | 9.25 | 1.30 | 1.65 | 2.50 | 4.00 | 2.50 | 3.80 | 1.50 | 3.70 |
| 1910 | 5.49 | 8.49 | 6.50 | 17.00 | 2.40 | 10.30 | 6.40 | 10.00 | 1.30 | 4.25 | 2.50 | 9.75 | 2.75 | 9.50 | 2.50 | 9.50 |
| 1911 | 7.00 | 11.00 | 4.80 | 12.45 | 3.00 | 12.80 | 8.60 | 12.50 | 3.50 | 6.00 | 7.00 | 16.25 | 8.00 | 15.50 | 5.00 | 15.75 |
| 1912 | 9.00 | 13.00 | 4.80 | 13.35 | 3.00 | 14.20 | 10.25 | 14.00 | 1.50 | 6.50 | 3.80 | 16.25 | 2.50 | 15.50 | 2.75 | 15.50 |
| 1913 | 5.00 | 11.50 | 4.20 | 13.20 | 1.60 | 13.85 | 7.50 | 13.40 | 1.50 | 2.25 | 2.50 | 5.90 | 2.50 | 5.50 | 2.00 | 5.50 |
| 1914 | 5.00 | 9.25 | 7.00 | 18.50 | 2.00 | 11.40 | 7.40 | 11.25 | 1.40 | 2.70 | 3.00 | 7.85 | 3.00 | 7.00 | 2.00 | 7.00 |
| 1915. | | | | | | | | | | | | | | | | |
| January | 7.40 | 9.65 | 10.00 | 14.75 | 8.80 | 9.55 | 9.30 | 9.60 | 2.60 | 3.60 | 5.50 | 7.00 | 5.50 | 6.50 | ..... | ..... |
| February | 7.40 | 9.65 | 9.00 | 14.75 | 8.40 | 9.25 | 8.90 | 9.35 | 2.60 | 3.60 | 4.50 | 7.00 | 4.50 | 7.00 | ..... | ..... |
| March | 7.00 | 9.65 | 7.50 | 14.25 | 7.80 | 8.90 | 8.15 | 9.15 | 2.00 | 3.60 | 4.00 | 6.75 | 4.50 | 5.50 | ..... | ..... |
| April | 6.90 | 8.50 | 7.00 | 13.00 | 7.45 | 8.25 | 7.90 | 8.40 | 2.00 | 3.25 | 4.00 | 6.50 | 4.50 | 6.00 | ..... | ..... |
| May | 6.50 | 8.40 | 7.00 | 13.00 | 7.25 | 7.75 | 7.85 | 8.00 | 2.00 | 3.25 | 4.75 | 6.75 | 4.75 | 6.00 | ..... | ..... |
| June | 6.50 | 8.25 | 7.00 | 12.75 | 7.25 | 7.90 | 7.85 | 8.20 | 2.00 | 3.20 | 5.00 | 6.50 | 4.75 | 7.00 | ..... | ..... |
| July | 6.50 | 8.35 | 7.00 | 13.50 | 7.40 | 8.15 | 7.70 | 8.25 | 1.90 | 3.20 | 4.50 | 6.35 | 4.50 | 6.50 | ..... | ..... |
| August | 6.50 | 8.50 | 9.00 | 16.25 | 7.85 | 9.55 | 8.20 | 9.60 | 1.90 | 3.30 | 4.50 | 7.25 | 4.50 | 7.00 | ..... | ..... |
| September | 6.75 | 8.50 | 9.50 | 19.25 | 8.85 | 12.60 | 9.35 | 11.65 | 1.90 | 3.30 | 4.50 | 7.75 | 5.00 | 7.50 | ..... | ..... |
| October | 9.20 | 11.00 | 9.00 | 20.50 | 11.20 | 13.10 | 11.75 | 12.40 | 2.20 | 3.60 | 4.50 | 7.50 | 4.75 | 7.75 | ..... | ..... |
| November | 8.60 | 12.20 | 9.00 | 19.25 | 11.00 | 12.00 | 11.90 | 12.25 | 2.10 | 3.75 | 5.50 | 7.75 | 4.75 | 7.75 | ..... | ..... |
| December | 8.50 | 12.15 | 9.00 | 19.75 | 9.35 | 12.30 | 12.00 | 12.55 | 2.20 | 3.75 | 5.00 | 8.00 | 4.75 | 8.00 | ..... | ..... |
| Year | 6.50 | 12.20 | 7.00 | 20.50 | 7.25 | 13.00 | 8.00 | 12.40 | 1.90 | 3.75 | 4.00 | 8.00 | 4.50 | 8.00 | ..... | ..... |

[1] Poor to choice to 1905.

[2] Prime, 1901 to 1907.

[3] Prime, 1902 to 1904; poor to prime, 1905–1906.

## COTTON.

### TABLE 83.—*Cotton: Area and production of undermentioned countries, 1912–1914.*

[Bales of 478 pounds, net.]

| Country. | Area. | | | Production. | | |
|---|---|---|---|---|---|---|
| | 1912 | 1913 | 1914 | 1912 | 1913 | 1914 |
| NORTH AMERICA. | *Acres.* | *Acres.* | *Acres.* | *Bales.* | *Bales.* | *Bales.* |
| United States[1] | 34,283,000 | 37,089,000 | 36,832,000 | 13,703,421 | 14,156,486 | 16,134,930 |
| Porto Rico | (2) | (2) | (2) | [3] 416 | [3] 569 | [3] 693 |
| Total | | | | 13,703,837 | 14,157,055 | 16,135,623 |
| West Indies: | | | | | | |
| British— | | | | | | |
| Bahamas | (2) | (2) | (2) | [4] 28 | [4] 28 | (2) |
| Barbados | 3,971 | 2,985 | (2) | 953 | 888 | 535 |
| Grenada | (2) | (2) | (2) | [4] 796 | [4] 838 | [4] 749 |
| Jamaica | (2) | (2) | (2) | [4] 76 | [4] 145 | [4] 67 |
| Leeward Islands | (2) | (2) | (2) | [4] 2,271 | [4] 2,574 | [4] 2,637 |
| St. Lucia | (2) | (2) | (2) | [4] 7 | [4] 8 | [4] 11 |
| St. Vincent | 6,105 | 5,444 | (2) | [4] 946 | [4] 1,015 | [4] 884 |
| Trinidad and Tobago | (2) | (2) | (2) | [4] 28 | [4] 15 | (2) |
| Danish (St. Croix) | (2) | (2) | (2) | [4] 276 | [4] 745 | (2) |
| Haiti | (2) | (2) | (2) | [4] 9,077 | [4] 8,970 | (2) |
| SOUTH AMERICA. | | | | | | |
| Argentina | 4,458 | 6,919 | 5,478 | (2) | (2) | (2) |
| Brazil | (2) | (2) | (2) | 320,000 | 320,000 | 385,000 |
| Chili | (2) | 334 | (2) | (2) | 740 | (2) |
| Ecuador | (2) | (2) | (2) | (2) | [4] 757 | (2) |
| Peru | (2) | (2) | (2) | [4] 88,694 | [4] 110,314 | 105,617 |
| EUROPE. | | | | | | |
| Bulgaria | 1,885 | (2) | (2) | 646 | (2) | (2) |
| Malta | 1,144 | 1,042 | (2) | 508 | 472 | 411 |
| ASIA. | | | | | | |
| India: | | | | | | |
| British[5] | 21,615,000 | 22,028,000 | 25,020,000 | 2,751,464 | 3,857,741 | 4,238,494 |
| Native States | 1,550,636 | 1,472,609 | (2) | (2) | (2) | (2) |
| Total | 23,165,636 | 23,500,609 | | | | |
| Ceylon | (6) | (6) | (2) | [4] 1,490 | 28 | [4] 47 |
| Chosen (Korea) | 126,728 | (2) | (2) | 27,934 | (2) | (2) |
| Cyprus | (2) | (2) | (2) | [4] 7,632 | [4] 9,655 | 9,498 |
| Dutch East Indies | (2) | (2) | (2) | [4] 17,000 | (2) | (2) |
| Indo-China | (2) | (2) | (2) | [4] 14,459 | (2) | (2) |
| Japan | 6,758 | 6,178 | 4,942 | 5,057 | 4,462 | 2,979 |
| Philippine Islands | [7] 7,544 | [7] 7,544 | [7] 7,544 | [7] 6,098 | [7] 6,098 | [7] 6,098 |
| Russia, Asiatic: | | | | | | |
| Transcaucasia | (2) | 310,466 | 346,912 | 118,735 | 119,476 | 127,000 |
| Central Asia | (2) | 1,382,743 | 1,475,734 | 867,538 | 956,763 | 1,050,595 |
| Total | | 1,693,209 | 1,822,646 | 986,273 | 1,076,239 | 1,177,595 |
| Siam | (2) | (2) | (2) | 4,363 | 4,686 | (2) |
| AFRICA. | | | | | | |
| British Africa: | | | | | | |
| Northern Rhodesia | (2) | (2) | (2) | [4] 179 | [4] 483 | [4] 475 |
| Nyasaland Protectorate | 23,755 | 25,697 | (2) | [4] 6,773 | [4] 5,023 | (2) |
| East Africa | (2) | (2) | (2) | [4] 910 | [4] 282 | (2) |
| Gold Coast | (2) | (2) | (2) | [4] 43 | [4] 19 | 16 |
| Nigeria | (2) | (2) | (2) | [4] 9,148 | [4] 13,308 | 11,820 |
| Uganda | (2) | (2) | (2) | [4] 22,003 | [4] 23,414 | 27,461 |
| Union of South Africa | (2) | (2) | (2) | [4] 67 | [4] 68 | [4] 87 |
| Egypt | 1,787,436 | 1,788,474 | 1,821.970 | 1,560.938 | 1,565.290 | 1,450.506 |

[1] Linters not included. Quantity of linters produced: 609,594 bales in 1912, 638,881 in 1913, and 791,464 in 1914.

[2] No official statistics.

[3] Exports to foreign countries plus shipments to the United States.

[4] Exports.

[5] Includes Feudatory States.

[6] Less than 500 acres.

[7] Census of 1902.

## COTTON—Continued.

**TABLE 83.**—*Cotton: Area and production of undermentioned countries, 1912–1914*—Continued.

| Country. | Area. | | | Production. | | |
|---|---|---|---|---|---|---|
| | 1912 | 1913 | 1914 | 1912 | 1913 | 1914 |
| AFRICA—continued. | | | | | | |
| French Africa: | *Acres.* | *Acres.* | *Acres.* | *Bales.* | *Bales.* | *Bales.* |
| Algeria | 1,045 | (¹) | (¹) | 830 | 553 | (¹) |
| Tunis | 618 | (¹) | (¹) | 461 | (¹) | (¹) |
| Dahomey | (¹) | (¹) | (¹) | 577 | 809 | (¹) |
| Madagascar | (¹) | (¹) | (¹) | 25 | (¹) | (¹) |
| Senegal | (¹) | (¹) | (¹) | 92 | 36 | (¹) |
| Ivory Coast | (¹) | (¹) | (¹) | (¹) | 183 | (¹) |
| Upper Senegal and Niger | (¹) | (¹) | (¹) | 461 | 455 | (¹) |
| Somali Coast | (¹) | (¹) | (¹) | [2] 1 | (¹) | (¹) |
| German Africa: | | | | | | |
| East Africa | 35,770 | (¹) | (¹) | [2] 8,678 | [2] 10,109 | (¹) |
| Togo | (¹) | (¹) | (¹) | [2] 2,541 | [2] 2,322 | (¹) |
| Italian Africa—Eritrea | (¹) | (¹) | (¹) | [3] 1,247 | (¹) | (¹) |
| Sudan (Anglo-Egyptian) | (¹) | (¹) | (¹) | [2] 12,128 | [2] 10,737 | (¹) |
| OCEANIA. | | | | | | |
| British: | | | | | | |
| Solomon Islands | (¹) | (¹) | (¹) | [2] 20 | [2] 24 | (¹) |
| Queensland | 441 | (¹) | (¹) | 105 | 25 | 13 |
| French: | | | | | | |
| New Caledonia | (¹) | (¹) | (¹) | [2] 923 | 1,190 | [2] 1,596 |
| Tahiti | (¹) | (¹) | (¹) | 32 | 73 | (¹) |

[1] No official statistics. [2] Exports. [3] Imports from Eritrea into Italy.

**TABLE 84.**—*Cotton: Total production of countries for which estimates were available, 1900–1910.*

| Year. | Production. | Year. | Production. | Year. | Production. | Year. | Production. |
|---|---|---|---|---|---|---|---|
| | *Bales.*[1] | | *Bales.*[1] | | *Bales.*[1] | | *Bales.*[1] |
| 1900 | 15,893,591 | 1904 | 21,005,175 | 1908 | 23,688,292 | 1912 | ........ |
| 1901 | 15,926,048 | 1905 | 18,342,075 | 1909 | 20,679,334 | 1913 | ........ |
| 1902 | 17,331,503 | 1906 | 22,183,148 | 1910 | 22,433,269 | 1914 | ........ |
| 1903 | 17,278,881 | 1907 | 18,328,613 | 1911 | ........ | | |

[1] Bales of 478 pounds, net.

**TABLE 85.**—*Cotton: Acreage harvested, by States, 1906–1915.*

[Thousands of acres.]

| State. | 1906 | 1907 | 1908 | 1909 | 1910 | 1911 | 1912 | 1913 | 1914 | 1915[1] |
|---|---|---|---|---|---|---|---|---|---|---|
| Virginia | 36 | 23 | 28 | 25 | 33 | 43 | 47 | 47 | 45 | 36 |
| North Carolina | 1,374 | 1,408 | 1,458 | 1,359 | 1,478 | 1,624 | 1,545 | 1,576 | 1,527 | 1,250 |
| South Carolina | 2,389 | 2,485 | 2,545 | 2,492 | 2,534 | 2,800 | 2,695 | 2,790 | 2,861 | 2,400 |
| Georgia | 4,610 | 4,566 | 4,848 | 4,674 | 4,873 | 5,504 | 5,335 | 5,318 | 5,433 | 4,700 |
| Florida | 283 | 209 | 265 | 237 | 257 | 308 | 224 | 188 | 221 | 198 |
| Alabama | 3,659 | 3,148 | 3,591 | 3,471 | 3,560 | 4,017 | 3,730 | 3,760 | 4,007 | 3,400 |
| Mississippi | 3,408 | 3,081 | 3,395 | 3,291 | 3,317 | 3,340 | 2,889 | 3,067 | 3,054 | 2,650 |
| Louisiana | 1,740 | 1,540 | 1,550 | 930 | 975 | 1,075 | 929 | 1,244 | 1,299 | 1,090 |
| Texas | 8,894 | 8,478 | 9,316 | 9,660 | 10,060 | 10,943 | 11,338 | 12,597 | 11,931 | 10,200 |
| Arkansas | 2,098 | 1,902 | 2,296 | 2,218 | 2,238 | 2,363 | 1,991 | 2,502 | 2,480 | 2,150 |
| Tennessee | 814 | 693 | 754 | 735 | 765 | 837 | 783 | 865 | 915 | 780 |
| Missouri | 91 | 63 | 87 | 79 | 100 | 129 | 103 | 112 | 145 | 102 |
| Oklahoma | 1,982 | 2,064 | 2,311 | 1,767 | 2,204 | 3,050 | 2,665 | 3,009 | 2,847 | 1,950 |
| California | ........ | ........ | ........ | ........ | 9 | 12 | 9 | 14 | 47 | 34 |
| All other | ........ | ........ | ........ | ........ | ........ | ........ | ........ | ........ | 20 | 17 |
| United States | 31,378 | 29,660 | 32,444 | 30,938 | 32,403 | 36,045 | 34,283 | 37,089 | 36,832 | 30,957 |

[1] Preliminary estimate.

## COTTON—Continued.

TABLE 86.—*Cotton: Production of lint (excluding linters) in 500-pound gross weight bales, by States, and total value of crop, 1906 to 1915.*

[Thousands of bales and dollars. As finally reported by U. S. Bureau of the Census.]

| State. | 1906 | 1907 | 1908 | 1909 | 1910 | 1911 | 1912 | 1913 | 1914 | 1915[1] |
|---|---|---|---|---|---|---|---|---|---|---|
| Virginia | 14 | 9 | 12 | 10 | 15 | 30 | 24 | 23 | 25 | 16 |
| North Carolina | 579 | 605 | 647 | 601 | 706 | 1,076 | 866 | 793 | 931 | 708 |
| South Carolina | 876 | 1,119 | 1,171 | 1,100 | 1,164 | 1,649 | 1,182 | 1,378 | 1,534 | 1,160 |
| Georgia | 1,593 | 1,816 | 1,931 | 1,804 | 1,767 | 2,769 | 1,777 | 2,317 | 2,718 | 1,909 |
| Florida | 56 | 50 | 62 | 54 | 59 | 83 | 53 | 59 | 81 | 50 |
| Alabama | 1,262 | 1,113 | 1,346 | 1,024 | 1,194 | 1,716 | 1,342 | 1,495 | 1,751 | 1,050 |
| Mississippi | 1,531 | 1,468 | 1,656 | 1,083 | 1,263 | 1,204 | 1,046 | 1,311 | 1,246 | 940 |
| Louisiana | 988 | 676 | 470 | 253 | 246 | 385 | 376 | 444 | 449 | 360 |
| Texas | 4,174 | 2,300 | 3,815 | 2,523 | 3,049 | 4,256 | 4,880 | 3,945 | 4,592 | 3,175 |
| Arkansas | 941 | 775 | 1,033 | 714 | 821 | 939 | 792 | 1,073 | 1,016 | 785 |
| Tennessee | 306 | 275 | 344 | 247 | 332 | 450 | 277 | 379 | 384 | 295 |
| Missouri | 54 | 36 | 62 | 45 | 60 | 97 | 56 | 67 | 82 | 52 |
| Oklahoma | 898 | 862 | 691 | 545 | 923 | 1,022 | 1,021 | 840 | 1,262 | 630 |
| All other | 2 | 3 | 2 | 2 | 10 | 17 | 11 | 32 | 64 | 40 |
| United States | 13,274 | 11,107 | 13,242 | 10,005 | 11,609 | 15,693 | 13,703 | 14,156 | 16,135 | 11,161 |
| Total value of crop | $640,310 | $613,630 | $588,810 | $688,350 | $809,710 | $749,890 | $786,800 | $885,350 | $591,130 | $602,393 |

[1] Preliminary estimate.

TABLE 87.—*Cotton: Condition of crop, United States, monthly, 1894–1915.*

[Prior to 1901 figures of condition relate to first of month following dates indicated.]

| Year. | May 25. | June 25. | July 25. | Aug. 25. | Sept. 25. | Year. | May 25. | June 25. | July 25. | Aug. 25. | Sept. 25. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | *P. ct.* | *P. ct* | *P. ct.* | *P. ct.* | *P. ct.* | | *P. ct.* | *P. ct.* | *P. ct.* | *P. ct.* | *P. ct.* |
| 1894 | 88.3 | 89.6 | 91.8 | 85.9 | 82.7 | 1905 | 77.2 | 77.0 | 74.9 | 72.1 | 71.2 |
| 1895 | 81.0 | 82.3 | 77.9 | 70.8 | 65.1 | 1906 | 84.6 | 83.3 | 82.9 | 77.3 | 71.6 |
| 1896 | 97.2 | 92.5 | 80.1 | 64.2 | 60.7 | 1907 | 70.5 | 72.0 | 75.0 | 72.7 | 67.7 |
| 1897 | 83.5 | 86.0 | 86.9 | 78.3 | 70.0 | 1908 | 79.7 | 81.2 | 83.0 | 76.1 | 69.7 |
| 1898 | 89.0 | 91.2 | 91.2 | 79.8 | 75.4 | 1909 | 81.1 | 74.6 | 71.9 | 63.7 | 58.5 |
| 1899 | 85.7 | 87.8 | 84.0 | 68.5 | 62.4 | 1910 | 82.0 | 80.7 | 75.5 | 72.1 | 65.9 |
| 1900 | 82.5 | 75.8 | 76.0 | 68.2 | 67.0 | 1911 | 87.8 | 88.2 | 89.1 | 73.2 | 71.1 |
| 1901 | 81.5 | 81.1 | 77.2 | 71.4 | 61.4 | 1912 | 78.9 | 80.4 | 76.5 | 74.8 | 69.6 |
| 1902 | 95.1 | 84.7 | 81.9 | 64.0 | 58.3 | 1913 | 79.1 | 81.8 | 79.6 | 68.2 | 64.1 |
| 1903 | 74.1 | 77.1 | 79.7 | 81.2 | 65.1 | 1914 | 74.3 | 79.6 | 76.4 | 78.0 | 73.5 |
| 1904 | 83.0 | 88.0 | 91.6 | 84.1 | 75.8 | 1915 | 80.0 | 80.3 | 75.3 | 69.2 | 60.8 |

TABLE 88.—*Cotton: Yield per acre, price per pound Dec. 1, and value per acre, by States.*

| State. | Yield per acre (pounds of lint). | | | | | | | | | | | Farm price per pound (cents). | | | | | | Value per acre (dollars).[1] | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 10-year average, 1906–1915. | 1906 | 1907 | 1908 | 1909 | 1910 | 1911 | 1912 | 1913 | 1914 | 1915[2] | 10-year average, 1906–1915. | 1911 | 1912 | 1913 | 1914 | 1915 | 5-year average, 1910–1914. | 1915 |
| Va | 228 | 185 | 190 | 210 | 190 | 212 | 330 | 250 | 240 | 205 | 212 | 10.9 | 9.0 | 12.0 | 13.1 | 7.3 | 11.4 | 27.95 | 24.17 |
| N. C | 244 | 201 | 205 | 211 | 210 | 227 | 315 | 267 | 239 | 290 | 270 | 10.8 | 8.8 | 12.2 | 12.6 | 6.9 | 11.2 | 28.48 | 30.24 |
| S. C | 224 | 175 | 215 | 219 | 210 | 216 | 280 | 209 | 235 | 255 | 231 | 10.9 | 8.8 | 12.4 | 12.7 | 6.9 | 11.3 | 25.73 | 26.10 |
| Ga | 194 | 165 | 190 | 190 | 184 | 173 | 240 | 159 | 208 | 239 | 193 | 11.0 | 8.9 | 12.4 | 12.8 | 6.9 | 11.4 | 21.75 | 22.00 |
| Fla | 123 | 95 | 115 | 112 | 110 | 110 | 130 | 113 | 150 | 175 | 121 | 15.7 | 12.0 | 15.7 | 17.0 | 12.2 | 14.8 | 20.66 | 17.91 |
| Ala | 174 | 165 | 169 | 179 | 142 | 160 | 204 | 172 | 190 | 209 | 148 | 10.8 | 8.8 | 12.1 | 12.7 | 6.7 | 11.1 | 19.92 | 16.43 |
| Miss | 193 | 215 | 228 | 233 | 157 | 182 | 172 | 173 | 204 | 195 | 170 | 11.0 | 9.2 | 12.3 | 12.6 | 6.8 | 11.5 | 20.45 | 19.55 |
| La | 173 | 272 | 210 | 145 | 130 | 120 | 170 | 193 | 170 | 165 | 158 | 10.7 | 8.9 | 11.5 | 11.7 | 6.9 | 11.2 | 17.18 | 17.70 |
| Tex | 170 | 225 | 130 | 196 | 125 | 145 | 186 | 206 | 150 | 184 | 149 | 10.5 | 8.6 | 11.5 | 11.5 | 6.8 | 11.1 | 17.95 | 16.54 |
| Ark | 191 | 215 | 195 | 215 | 153 | 175 | 190 | 190 | 205 | 196 | 175 | 10.8 | 8.9 | 12.3 | 11.6 | 6.6 | 11.6 | 20.44 | 20.30 |
| Tenn | 197 | 180 | 190 | 218 | 158 | 207 | 257 | 169 | 210 | 200 | 181 | 10.8 | 8.8 | 12.4 | 12.7 | 6.4 | 11.3 | 22.45 | 20.45 |
| Mo | 288 | 285 | 275 | 340 | 271 | 285 | 360 | 260 | 286 | 270 | 244 | 10.4 | 8.8 | 11.3 | 11.5 | 6.5 | 11.0 | 29.71 | 26.84 |
| Okla | 175 | 217 | 200 | 143 | 147 | 200 | 160 | 183 | 132 | 212 | 155 | 10.2 | 8.0 | 11.8 | 11.4 | 6.5 | 11.3 | 17.78 | 17.52 |
| Cal | 442 | ..... | ..... | ..... | ..... | 335 | 390 | 450 | 500 | 500 | 479 | 10.8 | 7.5 | 12.5 | 13.0 | 7.0 | 11.2 | 46.01 | 53.65 |
| U. S | 186.3 | 202.5 | 178.8 | 194.9 | 154.3 | 170.7 | 207.7 | 190.9 | 182.0 | 209.2 | 172.5 | 10.8 | 8.8 | 11.9 | 12.2 | 6.8 | 11.2 | 21.05 | 19.46 |

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[1] Based upon farm price Dec. 1.

[2] Preliminary.

## COTTON—Continued.

TABLE 89.—*Cotton: Farm price per pound on first of each month, by geographical divisions, 1914 and 1915.*

| Month. | United States. | | South Atlantic States. | | N. Cent. States west of Miss. R. | | South Central States. | | Far Western States. | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1915 | 1914 | 1915 | 1914 | 1915 | 1914 | 1915 | 1914 | 1915 | 1914 |
| | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* |
| January | 6.6 | 11.7 | 6.7 | 12.1 | 6.2 | ........ | 6.5 | 11.5 | ........ | ........ |
| February | 7.4 | 11.9 | 7.6 | 12.7 | 6.9 | 12.1 | 7.3 | 11.6 | 10.0 | ........ |
| March | 7.4 | 12.6 | 7.5 | 14.9 | 7.1 | 11.6 | 7.4 | 11.5 | 8.6 | ........ |
| April | 8.1 | 11.9 | 8.3 | 12.7 | 7.0 | 11.6 | 8.0 | 11.5 | 7.0 | ........ |
| May | 9.1 | 12.2 | 9.4 | 12.8 | 8.0 | 11.5 | 9.0 | 11.8 | 9.1 | ........ |
| June | 8.6 | 12.4 | 8.9 | 13.2 | 8.0 | 12.0 | 8.5 | 12.0 | ........ | ........ |
| July | 8.6 | 12.4 | 8.7 | 13.1 | 8.0 | 12.0 | 8.5 | 12.1 | ........ | ........ |
| August | 8.1 | 12.4 | 8.2 | 12.9 | 8.2 | 12.1 | 8.0 | 12.2 | 7.0 | ........ |
| September | 8.5 | 8.7 | 8.6 | 8.5 | 8.5 | 8.0 | 8.5 | 8.8 | ........ | ........ |
| October | 11.2 | 7.8 | 11.5 | 8.0 | 10.8 | ........ | 11.1 | 7.7 | 11.0 | 7.5 |
| November | 11.6 | 6.3 | 11.9 | 6.5 | 11.8 | 6.2 | 11.7 | 6.2 | ........ | 10.0 |
| December | 11.2 | 6.8 | 11.4 | 6.9 | 11.0 | 6.5 | 11.3 | 6.7 | 11.2 | 7.0 |

TABLE 90.—*Cotton: Closing price of middling upland per pound, 1900–1915.*

| Date. | New York. | | New Orleans. | | Memphis. | | Galveston. | | Savannah. | | Charleston. | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Low. | High. | Low. | High. | Low. | High. | Low. | High. | Low. | High. | Low. | High. |
| | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* |
| 1900 | 7¼ | 11 | 7¼ | 11⅛ | 7⅝ | 11 | 7¼ | 10 | 7 5/16 | 10¼ | 7¼ | 10⅜ |
| 1901 | 7 | 12 | 7⅛ | 9 11/16 | 7⅛ | 9⅝ | 7⅝ | 9 11/16 | 7⅛ | 9⅝ | 7⅛ | 9⅝ |
| 1902 | 8 1/16 | 9⅞ | 7⅝ | 9¾ | 7 | 9½ | 7¾ | 9⅝ | 7 3/16 | 9 3/16 | 7 3/16 | 9⅝ |
| 1903 | 8.85 | 14.10 | 8 7/16 | 13⅝ | 8¼ | 13¼ | 8⅝ | 13⅝ | 8⅜ | 13¼ | 8¼ | 13½ |
| 1904 | 6.85 | 17.25 | 6½ | 16 7/16 | 6¾ | 16½ | 6⅝ | 16 | 6½ | 16¼ | 6½ | 16 |
| 1905 | 7.00 | 12.60 | 6⅝ | 12 1/16 | 6¾ | 12¼ | 6¾ | 12 | 6⅝ | 11 11/16 | 6⅝ | 11 5/16 |
| 1906 | 9.60 | 12.25 | 9⅝ | 11 11/16 | 9⅝ | 11 1/16 | 9¼ | 11 5/16 | 8⅞ | 11¼ | 8¾ | 11⅝ |
| 1907 | 10.60 | 13.55 | 10¼ | 13 5/16 | 10½ | 13½ | 10½ | 13 5/16 | 9¾ | 13 5/16 | 9½ | 13 |
| 1908 | 9.00 | 12.25 | 8 11/16 | 12¼ | 8¾ | 12⅝ | 8¾ | 12¼ | 8¼ | 11⅝ | 8¼ | 11⅝ |
| 1909 | 9.25 | 16.15 | 8⅞ | 15¾ | 9 | 15⅝ | 9 | 15¼ | 8 11/16 | 15⅞ | 8¾ | 15 9/16 |
| 1910 | 13.60 | 19.75 | 13¼ | 15⅞ | 13½ | 15⅝ | 13⅝ | 15⅞ | 13 1/16 | 15⅝ | 13 | 15⅝ |
| 1911 | 9.20 | 16.15 | 9 5/16 | 15 11/16 | 9¼ | 15 7/16 | 9¼ | 15⅝ | 8⅝ | 15¼ | 8¾ | 15⅝ |
| 1912 | 9.35 | 13.40 | 9 3/16 | 13¼ | 9 7/16 | 13¼ | 9⅜ | 13 5/16 | 8⅝ | 12¾ | 8¾ | 12¾ |
| 1913 | 11.70 | 14.50 | 11⅝ | 14 | 11¾ | 13¾ | 11¾ | 14⅝ | 11½ | 14⅛ | 11⅝ | 13⅞ |
| 1914 | 7.25 | 14.50 | 6½ | 13 11/16 | 6½ | 13¼ | 6⅝ | 14 | 6½ | 13⅛ | 6½ | 13½ |
| **1915.** | | | | | | | | | | | | |
| January | 7.90 | 8.70 | 7⅝ | 8⅛ | 7⅛ | 8⅛ | 7¾ | 8 7/16 | 7⅝ | 8¼ | 7¼ | 8¼ |
| February | 8.35 | 8.70 | 7.75 | 8 1/16 | 7.76 | 8 | 8.30 | 8½ | 8 | 8⅜ | 7¾ | 8⅝ |
| March | 8.25 | 9.65 | 7.75 | 9.06 | 7.88 | 8.87 | 8.25 | 9.35 | 8 | 8⅝ | 7¾ | 8⅝ |
| April | 9.80 | 10.60 | 9.06 | 9.68 | 8.87 | 9.50 | 9.35 | 10.10 | 8⅞ | 9⅝ | 8¾ | 9⅝ |
| May | 9.50 | 10.40 | 9.00 | 9.43 | 9.12 | 9.50 | 9.00 | 10.00 | 9¼ | 9⅝ | 9 | 9⅝ |
| June | 9.45 | 9.85 | 9.00 | 9.38 | 8.75 | 9.12 | 8.95 | 9.35 | 8 11/16 | 9¾ | ........ | 9 |
| July | 8.90 | 9.60 | 8.50 | 9.00 | 8.62 | 8.82 | 8.50 | 9.00 | 8¼ | 8 11/16 | ........ | 8½ |
| August | 9.20 | 9.85 | 8.69 | 9.38 | 8.75 | 9.25 | 8.75 | 9.50 | 8⅝ | 9 | ........ | ........ |
| September | 9.75 | 12.40 | 9.31 | 11.75 | 9.25 | 11.75 | 9.50 | 11.00 | 9¼ | 11⅝ | 9 | 11⅝ |
| October | 11.85 | 12.75 | 11.75 | 12.13 | 11.75 | 12.25 | 11.75 | 12.45 | 11¼ | 12½ | 11¼ | 12 |
| November | 11.60 | 12.50 | 11.25 | 12.00 | 11.38 | 11.88 | 11.50 | 12.40 | 11½ | 12⅜ | 11½ | 12 |
| December | 11.95 | 12.75 | 11.69 | 12.13 | 11.75 | 12.25 | 12.00 | 12.60 | 12 | 12⅝ | 11⅝ | 12 |
| Year | 7.90 | 12.75 | 7⅝ | 12.13 | 7⅛ | 12.25 | 7¾ | 12.60 | 7⅝ | 12½ | 7¼ | 12 |

## COTTON—Continued.

### TABLE 91.—*Cotton: International trade, calendar years 1912–1914.*

[Expressed in bales of 500 pounds gross weight or 478 pounds net. The figures for cotton refer to ginned and unginned cotton and linters, but not to mill waste, cotton batting, *scarto* (Egypt and Sudan). Wherever unginned cotton has been separately stated in the original reports it has been reduced to ginned cotton in this statement at the ratio of 3 pounds unginned to 1 pound ginned. See "General note" p. 417.]

EXPORTS.

[000 omitted.]

| Country. | 1912 | 1913 | 1914 (prelim.). | Country. | 1912 | 1913 | 1914 (prelim.). |
|---|---|---|---|---|---|---|---|
| | *Bales.* | *Bales.* | *Bales.* | | *Bales.* | *Bales.* | *Bales.* |
| Belgium | 242 | 298 | .......... | Netherlands | 163 | 150 | .......... |
| Brazil | 77 | 173 | 140 | Persia [1] | 129 | [2] 129 | .......... |
| British India | 1,689 | 2,223 | 2,791 | Peru | 89 | 110 | 79 |
| China | 225 | 206 | 184 | United States | 11,663 | 9,376 | 6,873 |
| Egypt | 1,721 | 1,445 | 1,225 | Other countries | 196 | 234 | .......... |
| France | 325 | 267 | .......... | | | | |
| Germany | 247 | 243 | .......... | Total | 16,766 | 14,854 | .......... |

IMPORTS.

| Country. | 1912 | 1913 | 1914 (prelim.). | Country. | 1912 | 1913 | 1914 (prelim.). |
|---|---|---|---|---|---|---|---|
| Austria-Hungary | 1,021 | 953 | .......... | Russia | 830 | 908 | 647 |
| Belgium | 652 | 647 | .......... | Spain | 428 | 407 | 389 |
| Canada | 165 | 166 | 152 | Sweden | 100 | 99 | .......... |
| France | 1,597 | 1,518 | .......... | Switzerland | 121 | 126 | .......... |
| Germany | 2,502 | 2,404 | .......... | United Kingdom | 5,193 | 4,010 | 3,447 |
| Italy | 987 | 931 | 879 | United States | 270 | 220 | 332 |
| Japan | 1,655 | 1,821 | .......... | Other countries | 357 | 339 | .......... |
| Mexico | 18 | [2] 18 | .......... | | | | |
| Netherlands | 324 | 317 | .......... | Total | 16,220 | 14,884 | .......... |

[1] Year beginning Mar. 21.

[2] Year preceding.

## COTTONSEED OIL.

### TABLE 92.—*Cottonseed oil: International trade, calendar years 1912–1914.*

[See "General note" p. 417.]

EXPORTS.

[000 omitted.]

| Country. | 1912 | 1913 | 1914 (prelim.). | Country. | 1912 | 1913 | 1914 (prelim.). |
|---|---|---|---|---|---|---|---|
| | *Gallons.* | *Gallons.* | *Gallons.* | | *Gallons.* | *Gallons.* | *Gallons.* |
| Belgium | 1,341 | 1,014 | .......... | United States | 47,457 | 35,304 | 28,841 |
| Egypt | 359 | 619 | 491 | Other countries | 40 | 59 | .......... |
| France | 172 | 271 | .......... | | | | |
| Netherlands | 40 | 31 | .......... | Total | 55,508 | 44,924 | .......... |
| United Kingdom | 6,099 | 7,626 | 8,213 | | | | |

IMPORTS.

| Country. | 1912 | 1913 | 1914 (prelim.). | Country. | 1912 | 1913 | 1914 (prelim.). |
|---|---|---|---|---|---|---|---|
| Algeria | 118 | [1] 118 | .......... | Mexico | 4,310 | 4,310 | .......... |
| Australia | 182 | 175 | .......... | Netherlands | 7,048 | 7,765 | .......... |
| Austria-Hungary | 127 | 16 | .......... | Norway | 1,554 | 1,542 | 1,881 |
| Belgium | 2,876 | 2,005 | .......... | Roumania | 593 | [1] 593 | .......... |
| Brazil | [2] 670 | 440 | 383 | Senegal | 382 | [1] 382 | .......... |
| Canada | 2,911 | 4,104 | 4,079 | Serbia [4] | 396 | 396 | .......... |
| Egypt | 345 | 118 | 74 | Sweden | 865 | 702 | .......... |
| France | 3,697 | 2,604 | .......... | United Kingdom | 7,587 | 4,990 | 6,198 |
| Germany | 7,900 | 4,786 | .......... | Uruguay [5] | 383 | 383 | .......... |
| Italy | 5,388 | 3,957 | 702 | Other countries | 4,306 | 6,466 | .......... |
| Malta [3] | 261 | 278 | .......... | | | | |
| Martinique | 262 | [1] 262 | .......... | Total | 52,161 | 46,392 | .......... |

[1] Year preceding.

[2] Data for 1909.

[3] Year beginning Apr. 1.

[4] Data for 1911.

[5] Year beginning July 1. Data for 1910.

## TOBACCO.

**Table 93.**—*Tobacco: Area and production of undermentioned countries, 1912–1914.*

| Country. | Area. | | | Production. | | |
|---|---|---|---|---|---|---|
| | 1912 | 1913 | 1914 | 1912 | 1913 | 1914 |
| NORTH AMERICA. | *Acres.* | *Acres.* | *Acres.* | *Pounds.* | *Pounds.* | *Pounds.* |
| United States | 1,216,000 | 1,216,000 | 1,224,000 | 962,855,000 | 953,734,000 | 1,034,679,000 |
| Canada: | | | | | | |
| Ontario | [2] 7,000 | 6,000 | 5,000 | 7,500,000 | 8,000,000 | 6,000,000 |
| Quebec | [2] 12,000 | 5,000 | 4,750 | 5,500,000 | 4,500,000 | 5,000,000 |
| Total | [2] 19,000 | 11,000 | 9,750 | 13,000,000 | 12,500,000 | 11,000,000 |
| Costa Rica | (1) | (1) | 2,734 | (1) | (1) | (1) |
| Cuba | (1) | (1) | (1) | 42,030,000 | 72,585,000 | 72,585,000 |
| Dominican Republic | (1) | (1) | (1) | 18,000,000 | 28,000,000 | (1) |
| Guatemala | (1) | (1) | 1,236 | (1) | (1) | (1) |
| Jamaica | 804 | 969 | (1) | (1) | (1) | (1) |
| Mexico | (1) | (1) | (1) | [3] 34,711,000 | [3] 34,711,000 | [3] 34,711,000 |
| SOUTH AMERICA. | | | | | | |
| Argentina | 24,137 | 23,860 | 36,744 | 18,000,000 | (1) | (1) |
| Brazil [4] | (1) | (1) | (1) | 54,465,930 | 64,788,421 | 59,481,096 |
| Chile | 2,478 | 3,430 | (1) | 5,077,304 | 8,523,645 | 6,282,228 |
| Uruguay | 3,956 | 4,159 | 2,503 | 2,957,724 | 3,062,062 | 1,737,805 |
| EUROPE. | | | | | | |
| Austria-Hungary: | | | | | | |
| Austria | 8,456 | 8,263 | (1) | 12,489,279 | 13,692,771 | (1) |
| Hungary | 123,644 | 111,731 | (1) | 150,896,296 | 146,428,871 | (1) |
| Bosnia-Herzegovina [5] | (1) | (1) | (1) | 6,398,000 | 13,227,600 | (1) |
| Total | .......... | .......... | .......... | 169,783,575 | 173,349,242 | .......... |
| Belgium | 9,926 | 9,941 | 10,309 | 22,109,492 | 19,702,290 | (1) |
| Bulgaria | 26,193 | 17,297 | (1) | 17,636,800 | 13,227,600 | (1) |
| Denmark | 524 | (1) | (1) | (1) | (1) | (1) |
| France | 38,145 | 25,474 | 20,514 | 49,883,925 | 35,763,021 | (1) |
| Germany | 38,981 | 34,996 | 25,404 | 85,661,744 | 56,952,951 | (1) |
| Italy | 19,053 | 21,004 | 18,038 | 20,960,000 | 18,739,100 | 20,943,700 |
| Netherlands | 1,023 | 1,149 | 932 | 1,858,266 | 2,087,000 | (1) |
| Roumania | 22,941 | 27,122 | 27,070 | 13,145,809 | 20,941,275 | 16,970,129 |
| Russia in Europe | 140,957 | 116,319 | (1) | 237,405,692 | 201,988,930 | (1) |
| Serbia | 5,167 | (1) | (1) | 3,276,917 | (1) | (1) |
| Sweden | 741 | (1) | (1) | 1,300,714 | 1,646,836 | (1) |
| Switzerland | 791 | 791 | 618 | 1,212,530 | 1,327,169 | 815,702 |
| ASIA. | | | | | | |
| India: | | | | | | |
| British [6] | 998,943 | 964,726 | 1,001,671 | (1) | (1) | (1) |
| Native States | 49,859 | 68,717 | (1) | (1) | (1) | (1) |
| Total | 1,048,802 | 1,033,443 | .......... | .......... | .......... | .......... |
| British North Borneo [4] | (1) | (1) | (1) | 2,844,000 | 2,500,000 | (1) |
| Ceylon | 14,292 | 12,968 | (1) | (1) | (1) | (1) |
| Chosen | 43,830 | (1) | (1) | 28,116,013 | (1) | (1) |
| Dutch East Indies: | | | | | | |
| Java | 460,719 | (1) | (1) | [4] 134,143,000 | (1) | (1) |
| Sumatra, East Coast of | (1) | (1) | (1) | [4] 48,284,000 | [4] 45,024,000 | (1) |
| Formosa | 918 | 839 | (1) | 990,126 | 959,477 | (1) |
| Japan | 71,988 | 77,176 | 88,709 | 96,095,176 | 111,955,049 | 115,741,500 |
| Philippine Islands | 140,948 | 170,477 | 150,459 | 65,219,054 | 101,544,736 | 103,024,183 |
| Russia, Asiatic | 36,754 | 37,990 | (1) | 28,790,677 | 31,462,230 | (1) |
| AFRICA. | | | | | | |
| Algeria | 22,733 | (1) | (1) | 21,556,138 | (1) | (1) |
| Tunis | 252 | 249 | (1) | 278,505 | 262,347 | 376,325 |
| Nyasaland | 7,411 | 10,496 | (1) | 3,391,360 | 4,159,680 | (1) |
| Rhodesia | (1) | (1) | 5,627 | [7] 606,219 | (1) | 3,162,000 |
| Union of South Africa | [7] 19,364 | [7] 19,364 | [7] 19,364 | [7] 14,961,000 | [7] 14,961,000 | [7] 14,961,000 |
| OCEANIA. | | | | | | |
| Australia | 2,449 | 2,745 | (1) | 2,574,432 | 1,903,138 | (1) |
| Fiji | 114 | (1) | (1) | 29,120 | (1) | (1) |

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[1] No official statistics.
[2] Census of 1910.
[3] Production in 1906.
[4] Exports.
[5] Unofficial estimate.
[6] Includes Feudatory States.
[7] Census of 1911.

## TOBACCO—Continued.

TABLE 94.—*Tobacco: Total production of countries for which estimates were available, 1900–1911.*[1]

| Year. | Production. | Year. | Production. | Year. | Production. | Year | Production. |
|---|---|---|---|---|---|---|---|
| | *Pounds.* | | *Pounds.* | | *Pounds.* | | *Pounds.* |
| 1900.... | 2,201,193,000 | 1904.... | 2,146,641,000 | 1908.... | 2,382,601,000 | 1912.... | .............. |
| 1901.... | 2,270,213,000 | 1905.... | 2,279,728,000 | 1909.... | 2,742,500,000 | 1913.... | .............. |
| 1902.... | 2,376,054,000 | 1906.... | 2,270,298,000 | 1910.... | 2,833,729,000 | 1914.... | .............. |
| 1903.... | 2,401,268,000 | 1907.... | 2,391,061,000 | 1911.... | 2,566,202,000 | | |

[1] Data for 1911 not strictly comparable with earlier years.

TABLE 95.—*Tobacco: Acreage, production, value, etc., in the United States 1849–1915.*

NOTE.—Figures in *italics* are census returns; figures in roman are estimates of the Department of Agriculture. Estimates of acres are obtained by applying estimated percentages of increase or decrease to the published numbers of the preceding year, except that a revised base is used for applying percentage estimates whenever new census data are available.

| Year. | Acreage (000 omitted). | Average yield per acre. | Production (000 omitted). | Average farm price per pound Dec. 1. | Farm value Dec. 1 (000 omitted). | Domestic exports of unmanufactured, fiscal year beginning July 1. | Imports of unmanufactured, fiscal year beginning July 1. | Condition of growing crop. | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | July 1. | Aug. 1. | Sept. 1. | When harvested. |
| | *Acres.* | *Lbs.* | *Lbs.* | *Cts.* | *Dolls.* | *Pounds.* | *Pounds.* | *P. ct.* | *P. ct.* | *P. ct.* | *P. ct.* |
| *1849*....... | ........ | ........ | *199,753* | ........ | ........ | ........ | ........ | ........ | ........ | ........ | ........ |
| *1859*....... | ........ | ........ | *434,209* | ........ | ........ | ........ | ........ | ........ | ........ | ........ | ........ |
| *1869*....... | ........ | ........ | *262,735* | ........ | ........ | ........ | ........ | ........ | ........ | ........ | ........ |
| *1879*....... | *639* | *739.7* | *472,661* | ........ | ........ | ........ | ........ | ........ | ........ | ........ | ........ |
| *1889*....... | *695* | *702.5* | *488,257* | ........ | ........ | ........ | ........ | ........ | ........ | ........ | ........ |
| *1899*....... | *1,101* | *788.5* | *868,113* | ........ | ........ | ........ | ........ | ........ | ........ | ........ | ........ |
| 1900....... | 1,046 | 778.0 | 814,345 | 6.6 | 53,661 | 315,787,782 | 26,851,253 | 88.5 | 82.9 | 77.5 | 76.1 |
| 1901....... | 1,039 | 788.0 | 818,953 | 7.1 | 58,283 | 301,007,365 | 29,428,837 | 86.5 | 72.1 | 78.2 | 81.5 |
| 1902....... | 1,031 | 797.3 | 821,824 | 7.0 | 57,564 | 368,184,084 | 34,016,956 | 85.6 | 81.2 | 81.5 | 84.1 |
| 1903....... | 1,038 | 786.3 | 815,972 | 6.8 | 55,515 | 311,971,831 | 31,162,636 | 85.1 | 82.9 | 83.4 | 82.3 |
| 1904....... | 806 | 819.0 | 660,461 | 8.1 | 53,383 | 334,302,091 | 33,288,378 | 85.3 | 83.9 | 83.7 | 85.6 |
| 1905....... | 776 | 815.6 | 633,034 | 8.5 | 53,519 | 312,227,202 | 41,125,970 | 87.4 | 84.1 | 85.1 | 85.8 |
| 1906....... | 796 | 857.2 | 682,429 | 10.0 | 68,233 | 340,742,864 | 40,898,807 | 86.7 | 87.2 | 86.2 | 84.6 |
| 1907....... | 821 | 850.5 | 698,126 | 10.2 | 71,411 | 330,812,658 | 35,005,131 | 81.3 | 82.8 | 82.5 | 84.8 |
| 1908....... | 875 | 820.2 | 718,061 | 10.3 | 74,130 | 287,900,946 | 43,123,196 | 86.6 | 85.8 | 84.3 | 84.1 |
| 1909....... | 1,180 | 804.3 | 949,357 | ........ | ........ | ........ | ........ | ........ | ........ | ........ | ........ |
| *1909*....... | *1,295* | *816.3* | *1,055,765* | 10.1 | 106,600 | 357,196,074 | 46,853,389 | 89.8 | 83.4 | 80.2 | 81.3 |
| 1910[1]...... | 1,366 | 807.7 | 1,103,415 | 9.3 | 102,142 | 355,327,072 | 48,203,288 | 85.3 | 78.5 | 77.7 | 80.2 |
| 1911....... | 1,013 | 893.7 | 905,109 | 9.4 | 85,210 | 379,845,320 | 54,740,380 | 72.6 | 68.0 | 71.1 | 80.5 |
| 1912....... | 1,226 | 785.5 | 962,855 | 10.8 | 104,063 | 418,796,906 | 67,977,118 | 87.7 | 82.8 | 81.1 | 81.8 |
| 1913....... | 1,216 | 784.3 | 953,734 | 12.8 | 122,481 | 449,749,982 | 61,174,751 | 82.8 | 78.3 | 74.5 | 76.6 |
| 1914....... | 1,224 | 845.7 | 1,034,679 | 9.8 | 101,411 | 348,346,091 | 45,764,728 | 66.0 | 66.5 | 71.4 | 81.8 |
| 1915....... | 1,368 | 775.1 | 1,060,587 | 9.1 | 96,041 | ........... | ........... | 85.5 | 79.7 | 80.7 | 81.9 |

[1] Figures adjusted to census basis.

## TOBACCO—Continued.

TABLE 96.—*Tobacco: Acreage, production, and total farm value, by States, 1915.*

| State. | Acreage. | Production. | Farm value Dec. 1. |
|---|---|---|---|
| | *Acres.* | *Pounds.* | *Dollars.* |
| New Hampshire | 100 | 140,000 | 17,000 |
| Vermont | 100 | 130,000 | 14,000 |
| Massachusetts | 7,300 | 8,030,000 | 1,164,000 |
| Connecticut | 22,200 | 29,970,000 | 5,095,000 |
| New York | 4,400 | 5,280,000 | 502,000 |
| Pennsylvania | 31,400 | 42,390,000 | 3,900,000 |
| Maryland | 22,000 | 16,280,000 | 1,384,000 |
| Virginia | 192,500 | 144,375,000 | 13,571,000 |
| West Virginia | 11,300 | 9,831,000 | 963,000 |
| North Carolina | 320,000 | 198,400,000 | 22,221,000 |
| South Carolina | 65,000 | 37,700,000 | 2,639,000 |
| Georgia | 1,700 | 1,496,000 | 344,000 |
| Florida | 3,900 | 3,549,000 | 816,000 |
| Ohio | 93,700 | 84,330,000 | 7,590,000 |
| Indiana | 13,500 | 11,340,000 | 828,000 |
| Illinois | 700 | 595,000 | 54,000 |
| Wisconsin | 41,000 | 36,900,000 | 2,214,000 |
| Missouri | 3,500 | 3,150,000 | 378,000 |
| Kentucky | 440,000 | 356,400,000 | 27,799,000 |
| Tennessee | 92,900 | 69,675,000 | 4,390,000 |
| Alabama | 200 | 100,000 | 22,000 |
| Louisiana | 300 | 126,000 | 38,000 |
| Texas | 200 | 100,000 | 27,000 |
| Arkansas | 500 | 300,000 | 51,000 |
| United States | 1,368,400 | 1,060,587,000 | 96,041,000 |

## TOBACCO—Continued.

TABLE 97.—*Tobacco: Yield per acre, price per pound Dec. 1, and value per acre, by States.*

| State. | Yield per acre (pounds). | | | | | | | | | | | Farm price per pound (cents). | | | | | | Value per acre (dollars).[1] | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 10-year average 1906–1915. | 1906 | 1907 | 1908 | 1909 | 1910 | 1911 | 1912 | 1913 | 1914 | 1915 | 10-year average 1906–1915. | 1911 | 1912 | 1913 | 1914 | 1915 | 5-year average 1910–1914. | 1915 |
| New Hampshire | 1,688 | 1,785 | 1,650 | 1,800 | 1,700 | 1,720 | 1,700 | 1,700 | 1,650 | 1,770 | 1,400 | 15.6 | 16.0 | 18.5 | 18.0 | 18.0 | 12.0 | 292.02 | 168.00 |
| Vermont | 1,628 | 1,700 | 1,625 | 1,735 | 1,675 | 1,600 | 1,700 | 1,700 | 1,550 | 1,700 | 1,300 | 15.3 | 16.0 | 18.5 | 18.0 | 18.0 | 11.0 | 280.70 | 143.00 |
| Massachusetts | 1,600 | 1,750 | 1,525 | 1,650 | 1,600 | 1,730 | 1,650 | 1,700 | 1,550 | 1,750 | 1,100 | 17.1 | 20.0 | 23.9 | 21.0 | 17.7 | 14.5 | 326.21 | 159.50 |
| Connecticut | 1,630 | 1,735 | 1,510 | 1,680 | 1,650 | 1,730 | 1,625 | 1,700 | 1,550 | 1,770 | 1,350 | 18.1 | 20.5 | 24.1 | 21.0 | 18.5 | 17.0 | 336.24 | 229.50 |
| New York | 1,215 | 1,250 | 1,150 | 1,175 | 1,175 | 1,250 | 1,330 | 1,300 | 1,020 | 1,300 | 1,200 | 10.2 | 10.4 | 12.6 | 12.2 | 12.0 | 9.5 | 137.76 | 114.00 |
| Pennsylvania | 1,332 | 1,375 | 1,260 | 1,325 | 985 | 1,500 | 1,420 | 1,450 | 1,200 | 1,450 | 1,350 | 9.3 | 9.5 | 8.5 | 7.5 | 8.5 | 9.2 | 122.18 | 124.20 |
| Maryland | 704 | 600 | 660 | 700 | 710 | 690 | 735 | 660 | 740 | 800 | 740 | 7.8 | 7.5 | 8.0 | 9.3 | 8.0 | 8.5 | 58.77 | 62.90 |
| Virginia | 738 | 675 | 760 | 815 | 775 | 780 | 800 | 600 | 770 | 650 | 750 | 9.9 | 9.6 | 12.0 | 13.9 | 9.0 | 9.4 | 76.91 | 70.50 |
| West Virginia | 764 | 780 | 720 | 750 | 875 | 640 | 750 | 760 | 680 | 820 | 870 | 10.9 | 8.0 | 11.0 | 12.0 | 11.0 | 10.0 | 76.26 | 87.00 |
| North Carolina | 634 | 580 | 625 | 670 | 600 | 600 | 710 | 620 | 670 | 650 | 620 | 12.0 | 11.6 | 16.0 | 18.5 | 11.5 | 11.2 | 88.77 | 69.44 |
| South Carolina | 744 | 670 | 900 | 865 | 800 | 630 | 810 | 700 | 760 | 730 | 580 | 10.1 | 12.6 | 10.9 | 13.8 | 9.7 | 7.0 | 81.65 | 40.60 |
| Georgia | 850 | 675 | 860 | 975 | 700 | 680 | 900 | 830 | 1,000 | 1,000 | 880 | 29.6 | 28.0 | 30.0 | 31.0 | 25.0 | 23.0 | 239.40 | 202.40 |
| Florida | 887 | 875 | 925 | 990 | 710 | 680 | 940 | 840 | 1,000 | 1,000 | 910 | 31.4 | 28.0 | 30.0 | 31.0 | 30.0 | 23.0 | 256.32 | 209.30 |
| Ohio | 876 | 1,060 | 900 | 670 | 925 | 810 | 925 | 920 | 750 | 900 | 900 | 9.5 | 7.6 | 9.1 | 11.4 | 8.8 | 9.0 | 77.51 | 81.00 |
| Indiana | 858 | 915 | 940 | 700 | 950 | 880 | 910 | 800 | 750 | 900 | 840 | 9.3 | 7.8 | 9.0 | 11.0 | 9.0 | 7.3 | 78.02 | 61.32 |
| Illinois | 776 | 820 | 800 | 755 | 750 | 790 | 750 | 760 | 700 | 780 | 850 | 9.5 | 7.8 | 9.0 | 11.5 | 12.0 | 9.0 | 75.21 | 76.50 |
| Wisconsin | 1,154 | 1,275 | 1,100 | 1,130 | 1,180 | 1,050 | 1,250 | 1,290 | 1,180 | 1,180 | 900 | 9.7 | 10.0 | 11.0 | 12.0 | 11.0 | 6.0 | 123.23 | 54.00 |
| Missouri | 892 | 730 | 825 | 875 | 885 | 1,050 | 800 | 1,000 | 650 | 1,200 | 900 | 11.9 | 12.0 | 12.0 | 12.7 | 13.0 | 12.0 | 116.11 | 108.00 |
| Kentucky | 836 | 870 | 890 | 815 | 835 | 810 | 880 | 780 | 760 | 910 | 810 | 8.9 | 7.7 | 8.7 | 10.0 | 8.4 | 7.8 | 71.71 | 63.18 |
| Tennessee | 764 | 785 | 800 | 800 | 730 | 760 | 810 | 660 | 720 | 820 | 750 | 8.0 | 8.5 | 7.1 | 8.4 | 7.5 | 6.3 | 60.31 | 47.25 |
| Alabama | 586 | 510 | 450 | 450 | 600 | 500 | 700 | 750 | 700 | 700 | 500 | 25.6 | 25.0 | 35.0 | 25.0 | 28.0 | 22.0 | 181.70 | 110.00 |
| Louisiana | 480 | 475 | 350 | 850 | 550 | 550 | 450 | 300 | 450 | 400 | 420 | 30.0 | 31.0 | 30.0 | 25.0 | 35.0 | 30.0 | 123.90 | 126.00 |
| Texas | 633 | 550 | 700 | 800 | 650 | 600 | 650 | 700 | 600 | 580 | 500 | 23.8 | 20.0 | 17.5 | 22.0 | 21.0 | 27.0 | 131.26 | 135.00 |
| Arkansas | 624 | 695 | 570 | 610 | 600 | 650 | 600 | 650 | 650 | 610 | 600 | 15.3 | 12.0 | 18.0 | 16.4 | 18.0 | 17.0 | 101.88 | 102.00 |
| United States | 822.4 | 857.2 | 850.5 | 820.2 | 804.3 | 807.7 | 893.7 | 785.5 | 784.3 | 845.7 | 775.1 | 10.2 | 9.4 | 10.8 | 12.8 | 9.8 | 9.1 | 85.48 | 70.18 |

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[1] Based upon farm price Dec. 1.

## TOBACCO—Continued.

**Table 98.**—*Tobacco: Acreage, production, and farm value, by types and districts, 1914 and 1915.*

| Type and district. | Acreage (thousands of acres). | | Yield per acre (pounds). | | Production (thousands of pounds). | | Average farm price per pound Dec. 1 (cents). | | Total farm value (thousands of dollars).[1] | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1915 | 1914 | 1915 | 1914 | 1915 | 1914 | 1915 | 1914 | 1915 | 1914 |
| I. Cigar Types. | | | | | | | | | | |
| New England | 29.7 | 27.0 | 1,285 | 1,765 | 38,270 | 47,651 | 16.4 | 18.3 | 6,290 | 8,721 |
| New York | 4.4 | 4.6 | 1,200 | 1,300 | 5,280 | 5,980 | 9.5 | 12.0 | 502 | 718 |
| Pennsylvania | 31.4 | 33.1 | 1,350 | 1,450 | 42,390 | 47,995 | 9.2 | 7.5 | 3,900 | 3,600 |
| Ohio—Miami Valley | 60.3 | 56.4 | 900 | 960 | 54,270 | 54,144 | 9.0 | 9.1 | 4,884 | 4,927 |
| Wisconsin | 41.0 | 45.6 | 900 | 1,180 | 26,900 | 53,808 | 6.0 | 7.5 | 2,214 | 4,036 |
| Georgia and Florida | 5.6 | 6.2 | 900 | 1,000 | 5,045 | 6,200 | 23.0 | 28.5 | 1,160 | 1,765 |
| II. Chewing, Smoking, Snuff, and Export Types. | | | | | | | | | | |
| Burley district | 244.2 | 244.2 | 890 | 920 | 217,338 | 224,664 | 9.5 | 8.1 | 20,647 | 18,198 |
| Dark districts of Kentucky and Tennessee: | | | | | | | | | | |
| Paducah district | 93.1 | 70.0 | 730 | 780 | 67,963 | 54,600 | 6.0 | 6.1 | 4,078 | 3,331 |
| Henderson or stemming district | 93.0 | 71.5 | 760 | 950 | 70,680 | 67,925 | 6.0 | 6.3 | 4,240 | 4,279 |
| One-Sucker district | 38.4 | 38.4 | 780 | 960 | 29,952 | 36,864 | 5.5 | 5.6 | 1,647 | 2,064 |
| Clarksville and Hopkinsville district | 118.7 | 98.9 | 750 | 800 | 89,025 | 79,120 | 6.5 | 7.5 | 5,787 | 5,934 |
| Virginia sun-cured district | 12.0 | 12.0 | 850 | 760 | 10,200 | 9,120 | 8.0 | 6.5 | 816 | 593 |
| Virginia dark district | 65.0 | 50.0 | 840 | 740 | 54,600 | 37,000 | 8.0 | 7.3 | 4,368 | 2,701 |
| Bright yellow district: | | | | | | | | | | |
| Old belt—Virginia and North Carolina | 255.0 | 240.0 | 640 | 600 | 163,200 | 144,000 | 10.5 | 11.0 | 17,136 | 15,840 |
| New belt—Eastern North Carolina and South Carolina | 240.0 | 185.0 | 620 | 710 | 148,800 | 131,350 | 10.6 | 11.6 | 15,773 | 15,237 |
| Maryland and eastern Ohio export | 23.9 | 24.9 | 760 | 820 | 18,164 | 20,418 | 8.5 | 8.0 | 1,544 | 1,633 |
| Perique-Louisiana | .3 | .7 | 420 | 400 | 126 | 280 | 30.0 | 35.0 | 38 | 98 |
| Scattering | 12.7 | 15.0 | ...... | ...... | 8,384 | 13,560 | ...... | ...... | 1,017 | 1,212 |

[1] Based upon farm price Dec. 1.

**Table 99.**—*Tobacco: Wholesale price per pound, 1900–1915.*

| Date. | Cincinnati, leaf, plug, stock, common to good red.[1] | | Hopkinsville, leaf, common to fine. | | Louisville, leaf (Burley, dark red), common to good. | | Clarksville, leaf, common to fine. | | Richmond, leaf, smokers, common to good.[2] | | Baltimore, leaf, (Maryland), medium to fine red. | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Low. | High. | Low. | High. | Low. | High. | Low. | High. | Low. | High. | Low. | High. |
| | *Cents.* | *Cents.* | *Cents.* | *Cents.* | *Cents.* | *Cents.* | *Cents.* | *Cents.* | *Cents.* | *Cents.* | *Cents.* | *Cents.* |
| 1900 | 5.00 | 20.00 | 5.00 | 14.00 | 5.50 | 14.00 | 5.50 | 13.50 | ...... | ...... | 5.00 | 10.00 |
| 1901 | 4.50 | 12.00 | 5.00 | 15.00 | 5.50 | 12.50 | 6.00 | 14.00 | ...... | ...... | 6.00 | 11.00 |
| 1902 | 5.00 | 11.00 | 4.25 | 14.00 | 4.50 | 12.00 | 6.00 | 12.50 | ...... | ...... | 6.00 | 12.00 |
| 1903 | 4.00 | 12.00 | 5.00 | 13.50 | 5.00 | 13.75 | 5.50 | 13.00 | ...... | ...... | 6.50 | 12.00 |
| 1904 | 4.00 | 12.50 | 3.50 | 12.50 | 6.00 | 24.50 | 4.75 | 12.00 | 6.00 | 12.50 | 6.00 | 12.00 |
| 1905 | 4.00 | 14.00 | 5.00 | 14.00 | 5.50 | 14.50 | 5.75 | 13.00 | 8.00 | 13.00 | 6.00 | 12.00 |
| 1906 | 4.50 | 13.00 | 5.75 | 15.00 | 6.25 | 17.00 | 6.50 | 12.50 | 9.00 | 13.00 | 6.00 | 12.00 |
| 1907 | 6.50 | 17.50 | 6.50 | 16.00 | 6.50 | 14.50 | 7.50 | 17.00 | 9.00 | 13.00 | 6.50 | 12.00 |
| 1908 | 8.00 | 20.00 | 7.50 | 20.00 | 9.00 | 19.00 | 9.00 | 18.00 | 5.00 | 13.25 | 6.50 | 13.00 |
| 1909 | 12.00 | 20.00 | 6.00 | 14.00 | 12.00 | 18.50 | 7.50 | 14.00 | 5.00 | 10.00 | 8.50 | 13.00 |
| 1910 | 7.00 | 16.75 | 6.00 | 17.50 | 8.00 | 17.00 | 8.00 | 16.50 | 5.00 | 10.00 | 8.50 | 13.00 |
| 1911 | 5.50 | 14.50 | 7.00 | 18.00 | 6.00 | 12.75 | 9.50 | 15.50 | 5.00 | 12.00 | 8.50 | 13.00 |
| 1912 | 5.00 | 14.00 | 8.00 | 16.00 | 7.00 | 13.00 | 9.50 | 15.00 | 6.00 | 12.00 | 8.50 | 15.00 |
| 1913 | 5.50 | 13.75 | [3] 7.00 | [3] 14.00 | 7.00 | 16.00 | 8.50 | 15.00 | 6.00 | 16.00 | 8.50 | 15.00 |
| 1914 | 5.50 | 14.00 | [3] 7.50 | 14.00 | 9.00 | 16.00 | 7.50 | 16.00 | 7.00 | 20.00 | 8.00 | 15.00 |

[1] Common to fine red, 1900 and 1901.

[2] Brights, smokers, common to fine.

[3] Common to good, February to November, inclusive.

## TOBACCO—Continued.

TABLE 99.—*Tobacco: Wholesale price per pound, 1900–1915*—Continued.

| Date. | Cincinnati, leaf, plug, stock, common to good red. | | Hopkinsville, leaf, common to fine. | | Louisville, leaf (Burley, dark red), common to good. | | Clarksville, leaf, common to fine. | | Richmond, leaf, smokers, common to good. | | Baltimore, leaf, (Maryland), medium to fine red. | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Low. | High. | Low. | High. | Low. | High. | Low. | High. | Low. | High. | Low. | High. |
| 1915. | *Cents.* | *Cents.* | *Cents.* | *Cents.* | *Cents.* | *Cents.* | *Cents.* | *Cents.* | *Cents.* | *Cents.* | *Cents.* | *Cents.* |
| January | 6.00 | 13.00 | [1] 4.00 | 12.50 | 9.00 | 14.00 | 6.00 | 13.00 | 7.00 | 20.00 | 8.00 | 13.00 |
| February | 6.00 | 13.00 | 5.00 | 12.50 | 9.00 | 14.00 | 6.00 | 13.00 | 7.00 | 20.00 | 8.00 | 13.00 |
| March | 6.00 | 13.00 | 5.00 | 12.00 | 9.00 | 14.00 | 6.00 | 13.00 | 7.00 | 20.00 | 8.00 | 13.00 |
| April | 6.00 | 13.00 | 5.50 | 12.25 | 8.00 | 14.00 | 6.00 | 12.00 | 7.00 | 20.00 | 8.00 | 13.00 |
| May | 6.00 | 13.00 | 5.50 | 11.50 | 8.00 | 14.00 | 6.00 | 12.00 | 7.00 | 20.00 | 8.00 | 13.00 |
| June | 6.00 | 13.00 | 5.50 | 10.50 | 8.00 | 14.00 | 6.00 | 12.00 | 7.00 | 20.00 | 8.00 | 13.00 |
| July | 6.00 | 13.00 | ...... | ...... | 10.00 | 15.00 | 6.00 | 12.00 | 7.00 | 20.00 | 8.00 | 14.00 |
| August | 6.00 | 13.00 | ...... | ...... | 10.00 | 15.00 | 6.00 | 12.00 | 7.00 | 20.00 | 8.00 | 14.00 |
| September | 5.00 | 13.00 | ...... | ...... | 10.00 | 15.00 | ...... | ...... | 7.00 | 20.00 | 8.00 | 14.00 |
| October | 5.00 | 13.00 | ...... | ...... | 10.00 | 15.00 | ...... | ...... | 7.00 | 20.00 | 8.00 | 14.00 |
| November | 5.00 | 13.00 | [1] 6.00 | 6.00 | 10.00 | 15.00 | [2] 7.00 | 13.00 | 7.00 | 20.00 | 9.00 | 14.00 |
| December | 5.00 | 13.00 | [2] 5.50 | 10.00 | 10.00 | 15.00 | [2] 7.50 | 13.00 | 7.00 | 20.00 | 9.00 | 14.00 |
| Year | 5.00 | 13.00 | 4.00 | 12.50 | 8.00 | 15.00 | 7.50 | 13.00 | 7.00 | 20.00 | 8.00 | 14.00 |

[1] No grade specified.

[2] Common to good, February to November, inclusive.

TABLE 100.—*Tobacco (unmanufactured): International trade, calendar years 1912–1914.*

[Tobacco comprises leaf, stems, strippings, and *tombac*, but not snuff. See "General note," p. 417.]

### EXPORTS.

[000 omitted.]

| Country. | 1912 | 1913 | 1914 (prelim.). | Country. | 1912 | 1913 | 1914 (prelim.) |
|---|---|---|---|---|---|---|---|
| | *Pounds.* | *Pounds.* | *Pounds.* | | *Pounds.* | *Pounds.* | *Pounds.* |
| Aden [1] | 8,825 | 10,475 | .......... | Netherlands | 3,686 | 3,454 | .......... |
| Algeria | 14,445 | [2] 14,445 | .......... | Paraguay | 8,481 | 11,929 | .......... |
| Austria-Hungary | 26,281 | 19,247 | .......... | Persia [3] | 3,776 | [2] 3,776 | .......... |
| Brazil | 54,466 | 64,788 | 59,481 | Philippine Islands | 30,945 | 28,585 | 28,848 |
| British India | 32,256 | 35,843 | 23,349 | Russia | 23,674 | 28,291 | 9,678 |
| Bulgaria | 3,578 | [2] 3,578 | .......... | Santo Domingo | 12,687 | 21,584 | .......... |
| Ceylon | 4,482 | [2] 4,482 | .......... | Turkey [4] | 54,582 | 54,582 | .......... |
| Cuba | 42,983 | 30,669 | 36,868 | United States | 410,852 | 444,372 | 347,295 |
| Dutch East Indies | 189,551 | 193,632 | .......... | Other countries | 58,366 | 57,910 | .......... |
| Greece | 24,238 | 21,876 | .......... | | | | |
| Mexico | 1,271 | [2] 1,271 | .......... | Total | 1,009,425 | 1,054,789 | .......... |

### IMPORTS.

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Aden [1] | 12,734 | 11,401 | .......... | Italy | 47,917 | 56,160 | 41,425 |
| Argentina | 18,787 | 17,917 | 2,221 | Netherlands | 55,523 | 65,913 | .......... |
| Australia | 15,036 | 15,805 | .......... | Norway | 4,355 | 4,044 | 4,639 |
| Austria-Hungary | 49,183 | 48,174 | .......... | Portugal | 6,382 | 7,013 | .......... |
| Belgium | 25,989 | 21,597 | .......... | Southern Nigeria | 6,602 | [2] 6,602 | .......... |
| British India | 6,346 | 7,048 | 5,914 | Spain | 60,583 | 60,279 | 35,677 |
| Canada | 20,355 | 21,958 | 16,934 | Sweden | 9,913 | 10,319 | .......... |
| China | 19,057 | 21,545 | 15,781 | Switzerland | 19,429 | 18,470 | .......... |
| Denmark | 10,211 | 10,407 | .......... | United Kingdom | 137,970 | 158,668 | 154,427 |
| Egypt | 19,549 | 19,613 | 17,077 | United States | 57,478 | 66,899 | 57,407 |
| Finland | 10,294 | 9,450 | .......... | Other countries | 57,056 | 58,529 | .......... |
| France | 70,869 | 81,781 | .......... | | | | |
| Germany | 178,443 | 182,775 | .......... | Total | 920,056 | 977,367 | .......... |

[1] Year beginning Apr. 1.

[2] Year preceding.

[3] Year beginning Mar. 21.

[4] Year beginning Mar. 14. Data for 1910.

## FLAX.

### TABLE 101.—*Flax: Area and production of undermentioned countries, 1912–1914.*

[000 omitted.]

| Country. | Area. | | | Production. | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Seed. | | | Fiber. | | |
| | 1912 | 1913 | 1914 | 1912 | 1913 | 1914 | 1912 | 1913 | 1914 |
| NORTH AMERICA. | *Acres.* | *Acres.* | *Acres.* | *Bushels.* | *Bushels.* | *Bushels.* | *Pounds.* | *Pounds.* | *Pounds.* |
| United States | 2,851 | 2,291 | 1,645 | 28,073 | 17,853 | 13,749 | | | |
| Canada: | | | | | | | | | |
| Quebec | 1 | 1 | 1 | 9 | 9 | 8 | | | |
| Ontario | 9 | 7 | 5 | 143 | 164 | 84 | | | |
| Manitoba | 100 | 54 | 40 | 1,252 | 632 | 338 | | | |
| Saskatchewan | 1,780 | 1,386 | 958 | 23,033 | 15,579 | 6,131 | | | |
| Alberta | 132 | 105 | 80 | 1,693 | 1,155 | 614 | | | |
| Total Canada | 2,022 | 1,553 | 1,084 | 26,130 | 17,539 | 7,175 | | | |
| Mexico | (1) | (1) | (1) | 150 | 150 | 150 | | | |
| Total | | | | 54,353 | 35,542 | 21,074 | | | |
| SOUTH AMERICA. | | | | | | | | | |
| Argentina | 4,028 | 4,283 | 4,397 | 22,534 | 43,305 | 39,171 | | | |
| Uruguay | 143 | 141 | 128 | 879 | 1,302 | 963 | | | |
| Total | 4,171 | 4,424 | 4,525 | 23,413 | 44,607 | 40,134 | | | |
| EUROPE. | | | | | | | | | |
| Austria-Hungary: | | | | | | | | | |
| Austria | 91 | 90 | (1) | 650 | 608 | (1) | 51,532 | 48,976 | (1) |
| Hungary proper | 25 | (1) | (1) | 200 | 174 | (1) | 20,197 | 15,000 | (1) |
| Croatia-Slavonia | 16 | (1) | (1) | 20 | 15 | (1) | 8,000 | 7,000 | (1) |
| Bosnia-Herzegovina | (1) | (1) | (1) | 4 | 4 | (1) | 1,000 | 1,000 | (1) |
| Total Austria-Hungary | | | | 874 | 801 | | 80,729 | 71,976 | (1) |
| Belgium | 54 | 57 | 32 | 514 | 387 | (1) | 64,000 | 39,437 | (1) |
| Bulgaria | 1 | 1 | 2 | 6 | 8 | (1) | 308 | (1) | (1) |
| France | 69 | 75 | 46 | 576 | 740 | 336 | 46,074 | 48,437 | 23,370 |
| Italy | 22 | 22 | 22 | 343 | 405 | 323 | 5,511 | 5,732 | 5,070 |
| Netherlands | 36 | 36 | 19 | 428 | 326 | 212 | 21,217 | 16,606 | 10,811 |
| Roumania | 79 | 67 | 21 | 772 | 569 | 165 | 8,953 | 4,759 | 2,137 |
| Russia: | | | | | | | | | |
| Russia proper | 3,237 | 3,443 | 3,307 | 20,574 | 22,898 | (1) | | | |
| Poland | 80 | 88 | 80 | 793 | 878 | (1) | | | |
| Northern Caucasia | 137 | 144 | 182 | 810 | 680 | (1) | | | |
| Total Russia, European | 3,454 | 3,675 | 3,569 | 22,177 | 24,456 | | [2] 1,172,059 | [2] 1,703,209 | [2] 1,152,349 |
| Serbia | 4 | (1) | (1) | (1) | (1) | (1) | 2,095 | (1) | (1) |
| Sweden | (1) | 3 | (1) | (1) | 3 | (1) | (1) | 418 | (1) |
| Ireland | 55 | 59 | 49 | (1) | (1) | (1) | 29,021 | 28,341 | 18,203 |
| Total | | | | 25,690 | 27,692 | | 1,429,967 | [3] 1,918,915 | |

[1] No official statistics. [2] Includes 27 governments only. [3] Not including Bulgaria and Serbia.

## FLAX—Continued.

TABLE 101.—*Flax: Area and production of undermentioned countries, 1912–1914*—Con.

| Country. | Area. | | | Production. | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Seed. | | | Fiber. | | |
| | 1912 | 1913 | 1914 | 1912 | 1913 | 1914 | 1912 | 1913 | 1914 |
| ASIA. | | | | | | | | | |
| India: | *Acres.* | *Acres.* | *Acres.* | *Bushels.* | *Bushels.* | *Bushels.* | *Pounds.* | *Pounds.* | *Pounds.* |
| British | 5,038 | 4,125 | 3,031 | 25,592 | 21,544 | 15,440 | | | |
| Native States | 436 | 433 | (1) | (1) | (1) | (1) | | | |
| Total | 5,474 | 4,558 | 3,031 | 25,592 | 21,544 | 15,440 | | | |
| Russia: | | | | | | | | | |
| Central Asia (4 governments) | 89 | 117 | 190 | 358 | 575 | (1) | | | |
| Siberia (4 governments) | 137 | 176 | 110 | 779 | 1,094 | (1) | | | |
| Transcaucasia (1 government) | 16 | 30 | (1) | 93 | 258 | (1) | | | |
| Total Russia, Asiatic | 242 | 323 | 300 | 1,230 | 1,927 | | | | |
| Total | 5,716 | 4,881 | 3,331 | 26,822 | 23,471 | | | | |
| AFRICA. | | | | | | | | | |
| Algeria | 1 | (1) | (1) | 13 | 15 | (1) | (1) | (1) | (1) |
| Grand total | | | | 130,291 | 131,327 | | 1,429,967 | 1,918,915 | |

[1] No official statistics.

TABLE 102.—*Flax (seed and fiber): Total production of countries named in Table 101 1896–1914.*

| Year. | Production. | | Year. | Production. | |
|---|---|---|---|---|---|
| | Seed. | Fiber. | | Seed. | Fiber. |
| | *Bushels.* | *Pounds.* | | *Bushels.* | *Pounds.* |
| 1896 | 82,684,000 | 1,714,205,000 | 1906 | 88,165,000 | 1,871,723,000 |
| 1897 | 57,596,000 | 1,498,054,000 | 1907 | 102,960,000 | 2,042,390,000 |
| 1898 | 72,938,000 | 1,780,693,000 | 1908 | 100,850,000 | 1,907,591,000 |
| 1899 | 66,348,000 | 1,138,763,000 | 1909 | 100,820,000 | 1,384,524,000 |
| 1900 | 62,432,000 | 1,315,931,000 | 1910 | 85,253,000 | 913,112,000 |
| 1901 | 72,314,000 | 1,050,260,000 | 1911 | 101,339,000 | 1,011,350,000 |
| 1902 | 83,891,000 | 1,564,840,000 | 1912 | 130,291,000 | 1,429,967,000 |
| 1903 | 110,455,000 | 1,492,383,000 | 1913 | 131,327,000 | 1,918,915,000 |
| 1904 | 107,743,000 | 1,517,922,000 | 1914 | | |
| 1905 | 100,458,000 | 1,494,229,000 | | | |

## FLAX—Continued.

TABLE 103.—*Flaxseed: Acreage, production, value, etc., in the United States, 1849–1915.*

NOTE.—Figures in *italics* are census returns; figures in roman are estimates of the Department of Agriculture. Estimates of acres are obtained by applying estimated percentages of increase or decrease to the published numbers of the preceding year, except that a revised base is used for applying percentage estimates whenever new census data are available.

| Year. | Acreage. | Average yield per acre. | Production. | Average farm price per bushel Dec. 1. | Farm value Dec. 1. | Condition of growing crop. | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | July 1. | Aug. 1. | Sept. 1. | When harvested. |
| | *Acres.* | *Bushels.* | *Bushels.* | *Cents.* | *Dollars.* | *P. ct.* | *P. ct.* | *P. ct.* | *P. ct.* |
| *1849* | | | *562,000* | | | | | | |
| *1859* | | | *567,000* | | | | | | |
| *1869* | | | *1,730,000* | | | | | | |
| *1879* | | | *7,170,000* | | | | | | |
| *1889* | *1,319,000* | *7.8* | *10,250,000* | | | | | | |
| *1899* | *2,111,000* | *9.5* | *19,979,000* | | | | | | |
| 1902 | 3,740,000 | 7.8 | 29,285,000 | 105.0 | 30,815,000 | | | | |
| 1903 | 3,233,000 | 8.4 | 27,301,000 | 81.7 | 22,292,000 | 86.2 | 80.3 | 80.5 | 74.0 |
| 1904 | 2,264,000 | 10.3 | 23,401,000 | 99.3 | 23,229,000 | 86.6 | 78.9 | 85.8 | 87.0 |
| 1905 | 2,535,000 | 11.2 | 28,478,000 | 84.4 | 24,049,000 | 92.7 | 96.7 | 94.2 | 91.5 |
| 1906 | 2,506,000 | 10.2 | 25,576,000 | 101.3 | 25,899,000 | 93.2 | 92.2 | 89.0 | 87.4 |
| 1907 | 2,864,000 | 9.0 | 25,851,000 | 95.6 | 24,713,000 | 91.2 | 91.9 | 85.4 | 78.0 |
| 1908 | 2,679,000 | 9.6 | 25,805,000 | 118.4 | 30,577,000 | 92.5 | 86.1 | 82.5 | 81.2 |
| 1909 | 2,742,000 | 9.4 | 25,856,000 | | | | | | |
| *1909* | *2,083,000* | *9.4* | *19,513,000* | 152.9 | 29,795,000 | 95.1 | 92.7 | 88.9 | 84.9 |
| 1910[1] | 2,467,000 | 5.2 | 12,718,000 | 231.7 | 29,472,000 | 65.0 | 51.7 | 48.3 | 47.2 |
| 1911 | 2,757,000 | 7.0 | 19,370,000 | 182.1 | 35,272,000 | 80.9 | 71.0 | 68.4 | 69.6 |
| 1912 | 2,851,000 | 9.8 | 28,073,000 | 114.7 | 32,202,000 | 88.9 | 87.5 | 86.3 | 83.8 |
| 1913 | 2,291,000 | 7.8 | 17,853,000 | 119.9 | 21,399,000 | 82.0 | 77.4 | 74.9 | 74.7 |
| 1914 | 1,645,000 | 8.4 | 13,749,000 | 126.0 | 17,318,000 | 90.5 | 82.1 | 72.9 | 77.4 |
| 1915 | 1,367,000 | 10.1 | 13,845,000 | 173.9 | 24,080,000 | 88.5 | 91.2 | 87.6 | 84.5 |

[1] Figures adjusted to census basis.

TABLE 104.—*Flaxseed: Acreage, production, and total farm value, by States, 1915.*

| State. | Acreage. | Average yield per acre. | Production. | Average farm price per bushel Dec. 1. | Farm value Dec. 1. |
|---|---|---|---|---|---|
| | *Acres.* | *Bushels.* | *Bushels.* | *Cents.* | *Dollars.* |
| Wisconsin | 7,000 | 13.5 | 94,000 | 180 | 169,000 |
| Minnesota | 300,000 | 10.5 | 3,150,000 | 176 | 5,544,000 |
| Iowa | 18,000 | 9.0 | 162,000 | 150 | 243,000 |
| Missouri | 6,000 | 8.0 | 48,000 | 135 | 65,000 |
| North Dakota | 660,000 | 9.9 | 6,534,000 | 178 | 11,631,000 |
| South Dakota | 150,000 | 11.0 | 1,650,000 | 167 | 2,756,000 |
| Nebraska | 7,000 | 11.0 | 77,000 | 147 | 113,000 |
| Kansas | 36,000 | 5.7 | 205,000 | 145 | 297,000 |
| Montana | 180,000 | 10.5 | 1,890,000 | 170 | 3,213,000 |
| Wyoming | 2,000 | 13.0 | 26,000 | 145 | 38,000 |
| Colorado | 1,000 | 9.4 | 9,000 | 120 | 11,000 |
| United States | 1,367,000 | 10.1 | 13,845,000 | 173.9 | 24,080,000 |

## FLAX—Continued.

TABLE 105.—*Flaxseed: Yield per acre, price per bushel Dec. 1, and value per acre, by States.*

| State. | Yield per acre (bushels). | | | | | | | | | | | Farm price per bushel (cents). | | | | | | Value per acre (dollars).[1] | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 10-year average, 1906–1915. | 1906 | 1907 | 1908 | 1909 | 1910 | 1911 | 1912 | 1913 | 1914 | 1915 | 10-year average, 1906–1915. | 1911 | 1912 | 1913 | 1914 | 1915 | 5-year average, 1910–1914. | 1915 |
| Wis. | 13.4 | 14.0 | 14.2 | 16.0 | 14.5 | 10.0 | 12.0 | 12.5 | 14.0 | 13.5 | 13.5 | 141 | 185 | 127 | 123 | 125 | 180 | 18.84 | 24.30 |
| Minn. | 9.7 | 11.0 | 10.5 | 10.6 | 10.0 | 7.5 | 8.0 | 10.2 | 9.0 | 9.3 | 10.5 | 143 | 182 | 120 | 123 | 128 | 176 | 13.40 | 18.48 |
| Iowa | 10.3 | 11.4 | 11.5 | 10.9 | 9.8 | 12.2 | 8.0 | 11.5 | 9.4 | 9.5 | 9.0 | 135 | 185 | 124 | 123 | 120 | 150 | 15.77 | 13.50 |
| Mo. | 7.1 | 7.3 | 10.0 | 7.0 | 8.1 | 8.4 | 3.0 | 6.0 | 5.0 | 8.0 | 8.0 | 126 | 100 | 110 | 115 | 104 | 135 | 8.80 | 10.80 |
| N. Dak. | 8.2 | 9.9 | 8.0 | 9.0 | 9.3 | 3.6 | 7.6 | 9.7 | 7.2 | 8.3 | 9.9 | 143 | 184 | 114 | 121 | 128 | 178 | 10.57 | 17.62 |
| S. Dak. | 8.5 | 10.5 | 10.0 | 10.7 | 9.4 | 5.0 | 5.3 | 8.6 | 7.2 | 7.5 | 11.0 | 139 | 178 | 113 | 120 | 123 | 167 | 9.60 | 18.37 |
| Nebr. | 8.6 | 8.5 | 11.0 | 11.0 | 8.5 | 8.0 | 5.0 | 9.5 | 6.0 | 7.0 | 11.0 | 134 | 185 | 128 | 110 | 119 | 147 | 10.87 | 16.17 |
| Kans. | 6.7 | 8.2 | 10.0 | 6.5 | 7.0 | 8.2 | 3.0 | 6.0 | 6.0 | 6.0 | 5.7 | 131 | 100 | 130 | 116 | 125 | 145 | 9.04 | 8.26 |
| Mont. | 10.3 | 12.0 | 13.0 | 11.5 | 12.0 | 7.0 | 7.7 | 12.0 | 9.0 | 8.0 | 10.5 | 138 | 180 | 112 | 115 | 120 | 170 | 12.81 | 17.85 |
| Wyo. | 10.4 | .... | .... | .... | .... | 10.0 | .... | 12.0 | 9.9 | 7.0 | 13.0 | .... | .... | .... | .... | .... | 145 | ..... | 18.85 |
| Colo. | 7.4 | .... | .... | .... | .... | 7.0 | 7.0 | 8.0 | 5.0 | 8.0 | 9.4 | 144 | 180 | 125 | 115 | 100 | 120 | 10.42 | 11.28 |
| U. S. | 8.6 | 10.2 | 9.0 | 9.6 | 9.4 | 5.2 | 7.0 | 9.8 | 7.8 | 8.4 | 10.1 | 141.6 | 182.1 | 114.7 | 119.9 | 126.0 | 173.9 | 11.18 | 17.62 |

[1] Based upon farm price Dec. 1.

TABLE 106.—*Flaxseed: Farm price per bushel, on first of each month, by geographical divisions, 1914 and 1915.*

| Month. | United States. | | North Central States east of Mississippi River. | | North Central States west of Mississippi River. | | Far Western States. | |
|---|---|---|---|---|---|---|---|---|
| | 1915 | 1914 | 1915 | 1914 | 1915 | 1914 | 1915 | 1914 |
| | *Cents.* | *Cents.* | *Cents.* | *Cents.* | *Cents.* | *Cents.* | *Cents.* | *Cents.* |
| January | 134.8 | 124.2 | 135.0 | 141.0 | 136.8 | 125.5 | 125.0 | 119.0 |
| February | 163.7 | 127.8 | 140.0 | ........ | 161.6 | 128.5 | 175.0 | 125.0 |
| March | 157.9 | 132.5 | 130.0 | 149.0 | 160.0 | 133.7 | 148.0 | 127.0 |
| April | 167.7 | 132.8 | ........ | 140.0 | 167.3 | 135.2 | 170.0 | 123.0 |
| May | 169.6 | 134.7 | 150.0 | 129.0 | 169.7 | 133.3 | 170.0 | 140.0 |
| June | 169.5 | 136.8 | 130.0 | 148.0 | 168.7 | 136.2 | 175.0 | 139.0 |
| July | 152.5 | 136.0 | 155.0 | 141.0 | 153.8 | 139.5 | 146.0 | 122.0 |
| August | 144.6 | 150.7 | ........ | 148.0 | 145.1 | 150.9 | 142.0 | 150.0 |
| September | 143.5 | 139.3 | 100.0 | 135.0 | 145.6 | 144.2 | 135.0 | 120.0 |
| October | 148.1 | 127.4 | 125.0 | 141.0 | 148.3 | 129.2 | 148.0 | 120.0 |
| November | 162.9 | 118.7 | ........ | 121.0 | 163.9 | 118.7 | 158.0 | ........ |
| December | 173.9 | 126.0 | 180.0 | 125.0 | 174.6 | 127.3 | 169.5 | 119.9 |

## FLAX—Continued.

TABLE 107.—*Flaxseed: Wholesale price per bushel, 1900–1915.*

| Date. | Cincinnati. | | Minneapolis. | | Milwaukee. | | Duluth. | |
|---|---|---|---|---|---|---|---|---|
| | | | | | No. 1 Northwestern. | | | |
| | Low. | High. | Low. | High. | Low. | High. | Low. | High. |
| 1900 | $1.00 | $1.45 | $1.32 | $1.86 | $1.30 | $1.86 | $1.28½ | $1.87 |
| 1901 | 1.20 | 1.50 | 1.38 | 1.90 | 1.30 | 1.88 | 1.33 | 1.88 |
| 1902 | 1.25 | 1.40 | 1.13 | 1.80 | 1.18 | 1.80 | 1.15¼ | 1.78 |
| 1903 | 1.00 | 1.30 | .89 | 1.24 | .94 | 1.24 | .92 | 1.20 |
| 1904 | 1.00 | 1.00 | .97 | 1.28 | 1.06 | 1.28 | 1.01⅛ | 1.28 |
| 1905 | 1.10 | 1.10 | .92 | 1.47 | .98 | 1.47 | .96¼ | 1.50 |
| 1906 | 1.10 | 1.12 | 1.03 | 1.25 | 1.05 | 1.25 | 1.09¼ | 1.25 |
| 1907 | 1.12 | 1.12 | .96 | 1.36½ | 1.07 | 1.34 | 1.06⅝ | 1.41⅝ |
| 1908 | 1.12 | 1.25 | 1.06½ | 1.51½ | 1.12 | 1.47 | 1.12⅞ | 1.49⅞ |
| 1909 | 1.25 | 1.25 | 1.29 | 1.99 | 1.35 | 2.09 | 1.36⅝ | 2.04⅝ |
| 1910 | 1.75 | 2.75 | 1.75 | 2.84 | 1.91½ | 2.75 | 1.89 | 2.84 |
| 1911 | 2.50 | 2.75 | 1.93 | 2.74½ | 1.92 | 2.70 | 1.93 | 2.70 |
| 1912 | 1.50 | 2.80 | 1.28 | 2.20 | 1.24½ | 2.39 | 1.22 | 2.53 |
| 1913 | 1.50 | 1.50 | ........ | ........ | 1.25½ | 1.51½ | 1.22⅞ | 1.53⅝ |
| 1914 | 1.40 | 1.50 | 1.28 | 1.88 | 1.30 | 1.93 | 1.28⅞ | 1.93 |
| 1915. | | | | | | | | |
| January | ........ | ........ | 1.59½ | 1.94¼ | 1.51½ | 1.98 | 1.61¼ | 1.93 |
| February | ........ | ........ | 1.80⅞ | 1.92½ | 1.81 | 1.87¾ | 1.83⅞ | 1.91⅝ |
| March | 1.80 | 1.80 | 1.80 | 2.08½ | 1.81 | 2.05 | 1.84¼ | 2.09 |
| April | 1.75 | 1.80 | 1.85 | 1.97¼ | 1.85 | 1.95 | 1.86⅝ | 1.98¼ |
| May | 1.70 | 1.75 | 1.87 | 2.00¼ | 1.87 | 1.98½ | 1.91 | 2.02¼ |
| June | 1.70 | 1.70 | 1.68½ | 1.86 | 1.68½ | 1.84 | 1.70½ | 1.85½ |
| July | 1.70 | 1.70 | 1.52½ | 1.75¼ | 1.52½ | 1.73¼ | 1.53 | 1.70¼ |
| August | ........ | ........ | 1.60 | 1.74½ | 1.60 | 1.72½ | 1.58½ | 1.69 |
| September | ........ | ........ | 1.61½ | 1.87½ | 1.61½ | 1.84½ | 1.62 | 1.82½ |
| October | ........ | ........ | 1.77 | 1.91½ | 1.77 | 1.87½ | 1.76 | 1.90¼ |
| November | ........ | ........ | 1.82½ | 2.09⅝ | 1.82½ | 2.07½ | 1.87½ | 2.12¼ |
| December | ........ | ........ | 1.98⅛ | 2.21 | 1.97 | 2.18 | 2.00¼ | 2.20½ |
| Year | 1.70 | 1.80 | 1.52½ | 2.21 | 1.51½ | 2.18 | 1.53 | 2.20½ |

## RICE.

TABLE 108.—*Rice: Area and production of undermentioned countries, 1912–1914.*

[Expressed in terms of cleaned rice.]

| Country. | Area. | | | Production. | | |
|---|---|---|---|---|---|---|
| | 1912 | 1913 | 1914 | 1912 | 1913 | 1914 |
| NORTH AMERICA. | *Acres.* | *Acres.* | *Acres.* | *Pounds.* | *Pounds.* | *Pounds.* |
| United States: | 723,000 | 827,000 | 694,000 | 695,944,000 | 715,111,000 | 656,917,000 |
| Hawaii[1] | 9,000 | (²) | (²) | 25,820,000 | (²) | (²) |
| Porto Rico[1] | 16,000 | (²) | (²) | 4,298,000 | (²) | (²) |
| Central America: | | | | | | |
| Guatemala | (²) | (²) | (²) | 3,650,000 | 3,501,000 | (²) |
| Salvador | (²) | (²) | 27,000 | (²) | (²) | 12,344,000 |
| Costa Rica | [3] 7,000 | (²) | 7,000 | (²) | (²) | (²) |
| Mexico | (²) | (²) | 41,000 | (²) | (²) | 33,921,000 |
| SOUTH AMERICA. | | | | | | |
| Argentina | [4] 20,000 | (²) | (²) | (²) | (²) | (²) |
| Brazil. Sao Paulo | 224,000 | (²) | (²) | 137,323,000 | 109,625,000 | 116,416,000 |
| British Guiana | 88,000 | 44,000 | 36,000 | (²) | (²) | (²) |
| Dutch Guiana | (²) | (²) | (²) | 5,683,000 | 5,463,000 | (²) |
| Peru | 138,000 | 138,000 | (²) | 114,313,000 | 108,869,000 | (²) |

[1] Census of 1909. [2] No official statistics. [3] Census of 1910. [4] Census of 1908.

## RICE—Continued.

TABLE 108.—*Rice: Area and production of undermentioned countries, 1912–1914*—Contd.

| Country. | Area. | | | Production. | | |
|---|---|---|---|---|---|---|
| | 1912 | 1913 | 1914 | 1912 | 1913 | 1914 |
| EUROPE. | *Acres.* | *Acres.* | *Acres.* | *Pounds.* | *Pounds.* | *Pounds.* |
| Bulgaria | 7,000 | 7,000 | (1) | 4,848,000 | 5,656,000 | (1) |
| France | 1,000 | (1) | (1) | 1,257,000 | (1) | (1) |
| Italy | 360,000 | 362,000 | 361,000 | 508,100,000 | 739,221,000 | 741,263,000 |
| Russia (North Caucasus) | 3,000 | 1,000 | (1) | 1,534,000 | 564,000 | (1) |
| Spain | 95,000 | 96,000 | 97,000 | 332,358,000 | 303,310,000 | 336,925,000 |
| ASIA. | | | | | | |
| India: | | | | | | |
| British [2] | 71,623,000 | 75,425,000 | 76,181,000 | 63,805,168,000 | 64,490,272,000 | 62,638,912,000 |
| Native States | 2,478,000 | (1) | (1) | (1) | (1) | (1) |
| Ceylon | 801,000 | 672,000 | 865,000 | 457,483,000 | 356,191,000 | [3] 290,819,000 |
| Federated Malay States | 126,000 | 124,000 | (1) | 73,476,000 | 87,321,000 | (1) |
| Japanese Empire: | | | | | | |
| Japan | 7,360,000 | 7,425,000 | 7,434,000 | 15,777,677,000 | 15,787,969,000 | 17,827,240,000 |
| Chosen (Korea) | 2,404,000 | (1) | (1) | 2,817,855,000 | 3,050,798,000 | 3,678,878,000 |
| Formosa | 1,189,000 | 1,221,000 | (1) | 1,271,265,000 | 1,610,461,000 | (1) |
| Java and Madura [4] | 5,860,000 | 6,309,000 | (1) | 7,187,270,000 | 7,951,049,000 | (1) |
| Philippine Islands | 2,666,000 | 2,820,000 | 3,076,000 | 717,441,000 | 1,512,299,000 | 1,403,516,000 |
| Russia, Asiatic: | | | | | | |
| Transcaucasia and Turkestan | 491,000 | 666,000 | (1) | 276,938,000 | 512,383,000 | (1) |
| Straits Settlements | 92,000 | (1) | (1) | (1) | (1) | (1) |
| AFRICA. | | | | | | |
| Egypt | 235,000 | 252,000 | 37,000 | 438,257,000 | 505,118,000 | 81,229,000 |
| Nyasaland | (1) | (1) | (1) | [5] 1,846,000 | [5] 3,385,000 | (1) |
| OCEANIA. | | | | | | |
| Australia | (1) | (6) | (1) | (1) | 75,000 | (1) |
| Fiji | 11,000 | 14,000 | (1) | (1) | (1) | (1) |

[1] No official statistics.

[2] Excludes feudatory States.

[3] Excluding production for Matara in southern province, which in 1913 amounted to 55,483,000 pounds.

[4] Excludes Soerakarta, Djokjakarta, and private lands.

[5] Crops grown by natives only.

[6] Less than 500 acres.

TABLE 109.—*Rice (cleaned): Total production in principal countries for which estimates are available, 1900–1913.*

[The figures below include the principal countries for which estimates are available. The totals shown are merely approximate. China and French Indo-China are not included below. Three Provinces of China in 1910 produced 47,204,000,000 pounds of rice. The totals below may represent at least two-thirds of the total world production of rice.]

| Year. | Production | Year. | Production. | Year. | Production. |
|---|---|---|---|---|---|
| | *Pounds.* | | *Pounds.* | | *Pounds.* |
| 1900 | 100,400,000,000 | 1905 | 102,400,000,000 | 1910 | 126,100,000,000 |
| 1901 | 94,400,000,000 | 1906 | 105,800,000,000 | 1911 | 102,100,000,000 |
| 1902 | 101,600,000,000 | 1907 | 100,300,000,000 | 1912 | 97,300,000,000 |
| 1903 | 101,800,000,000 | 1908 | 102,900,000,000 | 1913 | 100,700,000,000 |
| 1904 | 110,700,000,000 | 1909 | 127,700,000,000 | | |

## RICE—Continued.

TABLE 110.—*Rice: Acreage, production, value, etc., in the United States, 1904–1915.*

| Year. | Acreage. | Average yield per acre. | Production. | Average farm price per bushel Dec. 1. | Farm value Dec. 1. | Condition of growing crop. | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | July 1. | Aug. 1. | Sept. 1. | When harvested. |
| | *Acres.* | *Bushels.* | *Bushels.* | *Cents.* | *Dollars.* | *Per ct.* | *Per ct.* | *Per ct.* | *Per ct.* |
| 1904... | 662,000 | 31.9 | 21,096,000 | 65.8 | 13,892,000 | 88.2 | 90.2 | 89.7 | 87.3 |
| 1905... | 482,000 | 28.2 | 13,607,000 | 95.2 | 12,956,000 | 88.0 | 92.9 | 92.2 | 89.3 |
| 1906... | 575,000 | 31.1 | 17,855,000 | 90.3 | 16,121,000 | 82.9 | 83.1 | 86.8 | 87.2 |
| 1907... | 627,000 | 29.9 | 18,738,000 | 85.8 | 16,081,000 | 88.7 | 88.6 | 87.0 | 88.7 |
| 1908... | 655,000 | 33.4 | 21,890,000 | 81.2 | 17,771,000 | 92.9 | 94.1 | 93.5 | 87.7 |
| 1909... | 720,000 | 33.8 | 24,368,000 | 79.4 | 19,341,000 | ...... | ...... | ...... | ...... |
| *1909...* | *610,000* | *35.8* | *21,839,000* | 79.6 | 17,383,000 | 90.7 | 84.5 | 84.7 | 81.2 |
| 1910... | 723,000 | 33.9 | 24,510,000 | 67.8 | 16,624,000 | 86.3 | 87.6 | 88.8 | 88.1 |
| 1911... | 696,000 | 32,9 | 22,934,000 | 79.7 | 18,274,000 | 87.7 | 88.3 | 87.2 | 85.4 |
| 1912... | 723,000 | 34.7 | 25,054,000 | 93.5 | 23,423,000 | 86.3 | 86.3 | 88.8 | 89.2 |
| 1913... | 827,000 | 31.1 | 25,744,000 | 85.8 | 22,090,000 | 88.4 | 88.7 | 88.0 | 80.3 |
| 1914... | 694,000 | 34.1 | 23,649,000 | 92.4 | 21,849,000 | 86.5 | 87.6 | 88.9 | 88.0 |
| 1915... | 803,000 | 36.1 | 28,947,000 | 90.6 | 26,212,000 | 90.5 | 90.0 | 82.3 | 80.9 |

TABLE 111.—*Rice: Acreage, production, and farm value, by States, 1915.*

| State. | Acreage. | Average yield per acre. | Production. | Average farm price per bushel Dec. 1. | Farm value Dec. 1. |
|---|---|---|---|---|---|
| | *Acres.* | *Bushels.* | *Bushels.* | *Cents.* | *Dollars.* |
| North Carolina | 200 | 21.0 | 4,000 | 85 | 3,000 |
| South Carolina | 3,700 | 24.3 | 90,000 | 90 | 81,000 |
| Georgia | 900 | 29.3 | 20,000 | 88 | 23,000 |
| Florida | 500 | 25.0 | 12,000 | 75 | 9,000 |
| Missouri | 200 | 50.0 | 10,000 | 100 | 10,000 |
| Alabama | 300 | 25.0 | 8,000 | 75 | 6,000 |
| Mississippi | 1,800 | 25.0 | 45,000 | 88 | 40,000 |
| Louisiana | 401,000 | 34.2 | 13,714,000 | 90 | 12,343,000 |
| Texas | 260,000 | 30.5 | 7,930,000 | 89 | 7,058,000 |
| Arkansas | 100,000 | 48.4 | 4,840,000 | 95 | 4,598,000 |
| California | 34,000 | 66.7 | 2,268,000 | 90 | 2,041,000 |
| United States | 802,000 | 36.1 | 28,947,000 | 90.6 | 26,212,000 |

TABLE 112.—*Rice: Yield per acre, price per bushel Dec. 1, and value per acre, by States.*

| State. | Yield per acre (bushels). | | | | | | | | | | | Farm price per bushel (cents). | | | | | | Value per acre (dollars).[1] | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 10-year average, 1906–1915. | 1906 | 1907 | 1908 | 1909 | 1910 | 1911 | 1912 | 1913 | 1914 | 1915 | 10-year average, 1906–1915. | 1911 | 1912 | 1913 | 1914 | 1915 | 5-year average, 1910–1914. | 1915 |
| N. C. | 25.6 | 28.9 | 23.0 | 25.2 | 30.2 | 26.5 | 25.6 | 25.0 | 24.0 | 26.3 | 21.0 | 85 | 76 | 90 | 80 | 75 | 85 | 20.15 | 17.85 |
| S. C. | 23.7 | 22.0 | 27.0 | 24.0 | 25.6 | 21.0 | 11.7 | 25.0 | 30.0 | 26.0 | 24.3 | 92 | 75 | 93 | 90 | 92 | 90 | 19.74 | 21.87 |
| Ga. | 27.4 | 23.0 | 34.0 | 25.0 | 23.9 | 22.0 | 26.8 | 30.0 | 32.0 | 28.0 | 29.3 | 90 | 77 | 90 | 83 | 89 | 88 | 23.12 | 25.78 |
| Fla. | 26.1 | 35.0 | 30.0 | 25.0 | 25.0 | 21.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 82 | 75 | 90 | 60 | 70 | 75 | 17.77 | 18.75 |
| Mo. | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | 50.0 | .... | .... | .... | .... | .... | 100 | ..... | 50.00 |
| Ala. | 27.8 | 23.0 | 25.0 | 45.0 | 35.0 | 25.0 | 20.0 | 30.0 | 22.0 | 28.0 | 25.0 | 79 | 70 | 90 | 60 | 70 | 75 | 18.26 | 18.75 |
| Miss. | 28.7 | 20.0 | 22.0 | 31.0 | 30.0 | 30.0 | 36.0 | 35.0 | 28.0 | 30.0 | 25.0 | 82 | 77 | 90 | 70 | 85 | 88 | 25.06 | 22.00 |
| La. | 31.8 | 28.0 | 28.0 | 33.0 | 33.8 | 34.4 | 31.5 | 33.5 | 29.0 | 32.1 | 34.2 | 84 | 79 | 93 | 84 | 93 | 90 | 26.66 | 30.78 |
| Tex. | 33.6 | 36.0 | 32.0 | 34.5 | 34.0 | 33.0 | 34.3 | 35.5 | 32.0 | 33.8 | 30.5 | 84 | 80 | 94 | 86 | 32 | 89 | 28.37 | 27.14 |
| Ark. | 39.0 | 31.0 | 37.0 | 41.0 | 40.0 | 40.0 | 39.0 | 37.5 | 36.0 | 39.8 | 48.4 | 87 | 82 | 94 | 90 | 90 | 95 | 32.69 | 45.98 |
| Cal. | 48.5 | .... | .... | .... | .... | 33.0 | 40.0 | 50.0 | 48.0 | 53.3 | 66.7 | 87 | 75 | 91 | 100 | 100 | 90 | 39.65 | 60.03 |
| U. S. | 36.1 | 31.1 | 29.9 | 33.4 | 33.8 | 33.9 | 32.9 | 34.7 | 31.1 | 34.1 | 36.1 | 84.6 | 79.7 | 93.5 | 85.8 | 92.4 | 90.6 | 27.97 | 32.66 |

[1] Based upon farm price Dec. 1.

## RICE—Continued.

TABLE 113.—*Rice: Wholesale price per pound, 1900–1915.*

| Date. | New York. | | Cincinnati. | | Lake Charles. | | New Orleans. | | Houston. | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Domestic (good). | | Prime. | | Rough.[1] | | Honduras, cleaned. | | Head rice, cleaned. | |
| | Low. | High. | Low. | High. | Low. | High. | Low. | High. | Low. | High. |
| | *Cents.* | *Cents.* | *Cents.* | *Cents.* | *Dollars.* | *Dollars.* | *Cents.* | *Cents.* | *Cents.* | *Cents.* |
| 1900 | 4¼ | 5 | 5½ | 6 | ........ | ........ | 3⅞ | 6⅞ | ........ | ........ |
| 1901 | 4¾ | 5 | 5¾ | 6½ | 1.70 | 3.50 | 1¾ | 6⅞ | 3 | 5 |
| 1902 | 4¼ | 5¼ | 5¼ | 6¼ | 1.75 | 3.40 | 1½ | 6½ | 3½ | 5⅜ |
| 1903 | 4¼ | 5¼ | 4⅞ | 5½ | 1.50 | 3.60 | 1⅝ | 6½ | 4 | 6¼ |
| 1904 | 3⅞ | 4⅝ | 3¾ | 5¼ | 1.00 | 3.00 | 1 1/16 | 5¼ | 3 | 4⅝ |
| 1905 | 3⅞ | 4½ | 3 | 5¼ | 1.00 | 3.85 | 1 | 5¾ | 3 | 5 |
| 1906 | 4⅞ | 5½ | 4½ | 5½ | 2.00 | 3.85 | 1⅛ | 6 | 3½ | 5⅝ |
| 1907 | 5 | 6 | 4¾ | 6 | 1.75 | 4.10 | 1½ | 6½ | 4⅞ | 6¼ |
| 1908 | 5 | 6½ | 5½ | 8 | 1.75 | 4.33 | 1¾ | 7⅜ | 4¾ | 6¼ |
| 1909 | 4¾ | 5⅞ | 4½ | 8 | 1.50 | 3.75 | 1⅝ | 6½ | 4⅝ | 6⅜ |
| 1910 | 4 | 5⅜ | 4½ | 5½ | 1.55 | 3.25 | 1⅛ | 6⅜ | 3 | 5⅝ |
| 1911 | 3⅝ | 4¾ | 4½ | 5½ | 1.75 | 3.50 | 1⅞ | 5⅝ | 2¾ | 4⅝ |
| 1912 | 4¼ | 5¼ | 4½ | 6½ | 2.00 | 3.70 | 2 | 6 | 4 | 5⅝ |
| 1913 | 4¾ | 5¼ | 5¼ | 6¼ | 2.00 | 3.82 | 1.15 | 7 | 4 | 6 |
| 1914 | 4¾ | 5⅝ | 5¼ | 6¼ | 1.40 | 4.55 | 1¼ | 6⅝ | 3 | 5⅝ |
| **1915.** | | | | | | | | | | |
| January | 5 | 5½ | 5¾ | 6¼ | 2.85 | 4.10 | 2¼ | 5½ | 4½ | 4⅞ |
| February | 5¼ | 5½ | 5¾ | 6½ | 3.00 | 4.50 | 2½ | 5¾ | 4½ | 4¾ |
| March | [2] 5¼ | 5½ | 6 | 6½ | 3.00 | 4.61½ | 2½ | 5¼ | 4½ | 4¾ |
| April | 5¼ | 5½ | 6 | 6½ | ........ | ........ | 2½ | 5½ | 4½ | 4⅞ |
| May | 5¼ | 5½ | 6 | 6½ | ........ | ........ | 2⅞ | 5⅝ | 4⅝ | 4⅞ |
| June | 5¼ | 5½ | 6 | 6½ | ........ | ........ | 3 | 5⅝ | 4¾ | 5 |
| July | 5¼ | 5½ | 6 | 6½ | ........ | ........ | 3 | 5⅝ | 4⅞ | 5⅜ |
| August | 5 | 5½ | 5½ | 6½ | 3.05 | 3.47 | 2¼ | 5 | 4¾ | 5⅝ |
| September | 4½ | 5¼ | 5 | 6 | 2.90 | 3.63 | 2 | 4⅝ | 4¾ | 5¼ |
| October | 4½ | 5¼ | 5 | 6 | 2.80 | 3.35 | 2 | 5½ | 4⅝ | 5⅝ |
| November | 5 | 5¼ | 5 | 5¾ | 3.17 | 3.65 | 2 | 5½ | 4⅝ | 5⅜ |
| December | 5 | 5¼ | 5¼ | 5¾ | 3.00 | 3.65 | 2 | 5½ | 4¾ | 5 |
| Year | 4½ | 5½ | 5 | 6½ | 2.80 | 4.61½ | 2 | 5¾ | 4½ | 5⅜ |

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[1] Per barrel of 162 pounds.

[2] Mar. 15 the grade was changed to fancy head. Price of fancy head, Mar. 15 to 31, was 5¼–5½.

## RICE—Continued.

### TABLE 114.—*Rice: International trade, calendar years 1912–1914.*

[Mostly cleaned rice. Under rice is included paddy, unhulled, rough, cleaned, polished, broken, and cargo rice, in addition to rice flour and meal. Rice bran is not included. Rough rice or paddy, where specifically reported, has been reduced to terms of cleaned rice at ratio of 162 pounds rough, or unhulled, to 100 pounds cleaned. "Rice, other than whole or cleaned rice," in the returns of United Kingdom is not considered paddy, since the chief sources of supply indicate that it is practically all hulled rice. Cargo rice, a mixture of hulled and unhulled, is included without being reduced to terms of cleaned. Broken rice and rice flour and meal are taken without being reduced to terms of whole cleaned rice. See "General note," p. 417.]

EXPORTS.

[000 omitted.]

| Country. | 1912 | 1913 | 1914 (prelim.) | Country. | 1912 | 1913 | 1914 (prelim.) |
|---|---|---|---|---|---|---|---|
| | *Pounds.* | *Pounds.* | *Pounds.* | | *Pounds.* | *Pounds.* | *Pounds.* |
| Belgium | 105,884 | 91,066 | .......... | Penang | 378,754 | 378,754 | .......... |
| British India | 6,259,746 | 5,761,625 | 4,520,152 | Siam | 1,296,964 | 2,531,795 | .......... |
| Dutch East Indies | 119,760 | 144,609 | .......... | Singapore | 683,897 | [1] 683,897 | .......... |
| France | 55,866 | 65,044 | 59,389 | Other countries | 875,603 | 900,209 | .......... |
| French Indo-China | 1,792,772 | 2,831,962 | .......... | | | | |
| Germany | 379,930 | 406,414 | .......... | Total | 12,429,581 | 14,339,692 | .......... |
| Netherlands | 480,315 | 544,317 | 501,507 | | | | |

IMPORTS.

| Country. | 1912 | 1913 | 1914 (prelim.) | Country. | 1912 | 1913 | 1914 (prelim.) |
|---|---|---|---|---|---|---|---|
| Austria-Hungary | 154,100 | 166,011 | .......... | Netherlands | 735,323 | 903,971 | 774,456 |
| Belgium | 198,128 | 161,240 | .......... | Penang | 621,161 | [1] 621,161 | .......... |
| Brazil | 22,545 | 17,146 | 14,407 | Perak | 181,638 | [1] 181,638 | .......... |
| British India | 261,965 | 286,154 | 331,065 | Philippine Islands | 663,711 | 191,799 | 213,673 |
| Ceylon | 836,111 | [1] 836,111 | .......... | Russia | 254,875 | 269,727 | .......... |
| China | 360,052 | 721,986 | 903,235 | Selangor | 178,004 | [1] 178,004 | .......... |
| Cuba | 266,313 | 283,872 | 254,150 | Singapore | 965,390 | [1] 965,390 | .......... |
| Dutch East Indies | 1,004,378 | 1,117,271 | .......... | United Kingdom | 763,978 | 771,512 | 756,144 |
| Egypt | 75,711 | 119,735 | 110,933 | United States | 182,874 | 229,812 | 255,064 |
| France | 300,904 | 537,935 | 591,380 | Other countries | 1,272,679 | 1,397,593 | .......... |
| Germany | 924,496 | 1,052,917 | .......... | | | | |
| Japan | 744,812 | 1,212,423 | .......... | Total | 11,170,294 | 12,334,554 | .......... |
| Mauritius | 111,146 | [1] 111,146 | .......... | | | | |

[1] Year preceding.

## APPLES.

### TABLE 115.—*Apples: Production, and prices Dec. 1, by States, 1909-1915.*

[Production 1909 from census; production and prices, 1910–1915, estimates of Bureau of Crop Estimates.]

| State. | Production, barrels of 3 bushels (000 omitted). | | | | | | | Farm price per bushel (cents). | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1909 | 1910 | 1911 | 1912 | 1913 | 1914 | 1915 | 1910 | 1911 | 1912 | 1913 | 1914 | 1915 |
| Maine | 1,212 | 1,183 | 2,267 | 1,800 | 1,000 | 2,467 | 720 | 80 | 55 | 50 | 100 | 53 | 90 |
| New Hampshire | 369 | 600 | 533 | 733 | 267 | 667 | 353 | 80 | 79 | 55 | 113 | 53 | 100 |
| Vermont | 486 | 900 | 750 | 867 | 233 | 1,067 | 324 | 92 | 78 | 79 | 123 | 57 | 112 |
| Massachusetts | 850 | 967 | 1,000 | 1,100 | 767 | 1,467 | 885 | 90 | 89 | 76 | 134 | 65 | 101 |
| Rhode Island | 71 | 100 | 133 | 100 | 100 | 133 | 59 | 89 | 62 | 82 | 116 | 65 | 110 |
| Connecticut | 514 | 600 | 800 | 567 | 700 | 833 | 511 | 80 | 70 | 75 | 94 | 65 | 96 |
| New York | 8,471 | 5,666 | 13,000 | 14,667 | 6,500 | 16,533 | 8,528 | 100 | 59 | 50 | 95 | 45 | 77 |
| New Jersey | 469 | 567 | 1,033 | 567 | 700 | 1,133 | 777 | 78 | 60 | 72 | 85 | 55 | 78 |
| Pennsylvania | 3,683 | 3,867 | 6,833 | 4,233 | 3,400 | 7,700 | 5,085 | 75 | 54 | 70 | 89 | 50 | 67 |
| Delaware | 61 | 117 | 100 | 140 | 60 | 167 | 122 | .... | 85 | 82 | 117 | 58 | 88 |
| Maryland | 608 | 900 | 867 | 883 | 433 | 1,167 | 800 | 65 | 52 | 60 | 100 | 41 | 70 |
| Virginia | 2,036 | 4,033 | 2,400 | 5,000 | 1,733 | 5,100 | 4,393 | 80 | 74 | 60 | 86 | 46 | 65 |
| West Virginia | 1,408 | 2,367 | 2,600 | 3,433 | 333 | 4,133 | 2,513 | 78 | 71 | 55 | 130 | 48 | 64 |
| North Carolina | 1,592 | 2,400 | 1,200 | 2,533 | 1,000 | 3,000 | 1,972 | 98 | 88 | 75 | 95 | 49 | 79 |
| South Carolina | 121 | 247 | 157 | 200 | 87 | 267 | 221 | 100 | 126 | 100 | 145 | 85 | 110 |

## APPLES—Continued.

TABLE 115.—*Apples: Production, and prices Dec. 1, by States, 1909–1915*—Continued.

| State. | Production, barrels of 3 bushels (000 omitted). | | | | | | | Farm price per bushel (cents). | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1909 | 1910 | 1911 | 1912 | 1913 | 1914 | 1915 | 1910 | 1911 | 1912 | 1913 | 1914 | 1915 |
| Georgia | 299 | 467 | 267 | 467 | 300 | 667 | 625 | 105 | 118 | 101 | 108 | 80 | 97 |
| Ohio | 1,555 | 1,967 | 6,233 | 3,533 | 1,600 | 4,433 | 5,984 | 93 | 54 | 67 | 110 | 63 | 55 |
| Indiana | 920 | 1,633 | 2,967 | 1,400 | 2,200 | 1,433 | 3,883 | 90 | 68 | 84 | 88 | 70 | 57 |
| Illinois | 1,031 | 267 | 3,533 | 1,933 | 2,733 | 1,233 | 4,716 | 115 | 68 | 79 | 94 | 84 | 55 |
| Michigan | 4,111 | 1,400 | 4,100 | 5,733 | 2,967 | 5,733 | 3,150 | 102 | 70 | 50 | 82 | 49 | 72 |
| Wisconsin | 744 | 133 | 1,000 | 667 | 1,333 | 733 | 1,473 | 112 | 93 | 88 | 95 | 90 | 76 |
| Minnesota | 348 | 50 | 433 | 233 | 600 | 233 | 412 | 162 | 102 | 98 | 105 | 90 | 98 |
| Iowa | 2,249 | 67 | 3,167 | 500 | 2,367 | 533 | 3,220 | 130 | 81 | 101 | 112 | 97 | 70 |
| Missouri | 3,323 | 2,533 | 3,866 | 6,400 | 2,633 | 4,167 | 6,287 | 85 | 70 | 53 | 93 | 71 | 57 |
| South Dakota | 64 | 10 | 80 | 67 | 107 | 67 | 100 | 150 | 114 | 104 | 145 | 117 | 115 |
| Nebraska | 1,107 | 467 | 1,200 | 933 | 767 | 400 | 1,267 | 98 | 83 | 88 | 108 | 96 | 88 |
| Kansas | 452 | 2,200 | 800 | 2,233 | 900 | 1,033 | 2,125 | 78 | 100 | 71 | 110 | 95 | 85 |
| Kentucky | 2,456 | 1,767 | 2,033 | 3,200 | 2,300 | 3,000 | 4,170 | 100 | 92 | 85 | 92 | 78 | 71 |
| Tennessee | 1,547 | 1,733 | 967 | 2,967 | 1,300 | 2,867 | 2,025 | 92 | 104 | 81 | 106 | 75 | 85 |
| Alabama | 296 | 333 | 233 | 400 | 300 | 533 | 532 | 90 | 130 | 100 | 115 | 94 | 94 |
| Mississippi | 89 | 110 | 80 | 150 | 123 | 167 | 141 | 125 | 122 | 106 | 112 | 95 | 105 |
| Louisiana | 11 | ........ | ........ | ........ | ........ | ........ | ........ | .... | .... | .... | .... | .... | .... |
| Texas | 56 | 133 | 67 | 167 | 100 | 167 | 187 | 130 | 128 | 115 | 130 | 108 | 125 |
| Oklahoma | 247 | 400 | 350 | 567 | 367 | 500 | 780 | 107 | 120 | 92 | 122 | 90 | 101 |
| Arkansas | 765 | 900 | 1,000 | 1,700 | 1,333 | 1,667 | 1,183 | 105 | 115 | 92 | 102 | 83 | 89 |
| Montana | 189 | 140 | 300 | 300 | 280 | 300 | 347 | 120 | 115 | 103 | 142 | 76 | 93 |
| Wyoming | 6 | 3 | 7 | 10 | 10 | ........ | ........ | .... | .... | .... | 150 | 138 | 130 |
| Colorado | 1,186 | 500 | 900 | 1,033 | 1,100 | 1,500 | 693 | 115 | 122 | 80 | 108 | 70 | 95 |
| New Mexico | 139 | 113 | 227 | 250 | 217 | 300 | 273 | 140 | 119 | 120 | 128 | 98 | 112 |
| Arizona | 24 | 33 | 37 | 43 | 30 | 82 | 40 | 191 | 195 | 204 | 217 | 186 | 195 |
| Utah | 117 | 137 | 153 | 227 | 203 | 267 | 142 | 130 | 110 | 89 | 96 | 63 | 108 |
| Nevada | 25 | 53 | 33 | 87 | 53 | 67 | 40 | 145 | 151 | 124 | 132 | 125 | 140 |
| Idaho | 220 | 417 | 400 | 550 | 467 | 567 | 573 | 99 | 112 | 85 | 98 | 78 | 88 |
| Washington | 891 | 1,933 | 1,167 | 2,567 | 2,300 | 2,767 | 2,433 | 80 | 118 | 70 | 93 | 64 | 82 |
| Oregon | 644 | 1,267 | 500 | 1,367 | 1,167 | 1,100 | 1,043 | 100 | 111 | 69 | 85 | 81 | 95 |
| California | 1,645 | 1,533 | 1,567 | 1,900 | 1,000 | 2,000 | 1,563 | 82 | 92 | 90 | 117 | 76 | 93 |
| United States | 48,797 | 47,213 | 71,340 | 78,407 | 48,470 | 84,400 | 76,670 | 94.8 | 79.6 | 68.0 | 99.0 | 62.0 | 74.6 |

TABLE 116.—*Approximate relative production of principal varieties of apples, expressed as percentages of a normal crop of all apples.*

| Variety. | United States. | Maine. | New York. | Pennsylvania. | Virginia. | West Virginia. | Ohio. | Michigan. | Illinois. | Missouri. | Kentucky. | Arkansas. | Washington. | Oregon. | California. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *P.ct.* | *P.ct.* | *P.ct.* | *P.ct.* | *P.ct.* | *P.ct.* | *P.ct.* | *P.ct.* | *P.ct.* | *P.ct.* | *P.ct.* | *P.ct.* | *P.ct.* | *P.ct.* | *P.ct.* |
| Arkansas (Mammoth Black Twig) | 0.7 | 0.2 | ..... | 0.3 | 3.1 | 0.7 | 0.6 | 0.0 | 0.6 | 1.1 | 0.9 | 2.3 | 0.3 | ..... | 0.8 |
| Arkansas Black | .9 | ..... | ..... | .2 | .7 | .8 | .1 | ..... | .9 | 1.5 | 3.0 | 3.0 | 2.3 | 1.1 | 1.0 |
| Baldwin | 13.4 | 34.5 | 31.3 | 17.8 | 2.8 | 5.8 | 15.1 | 17.0 | 2.7 | 1.5 | 2.9 | .4 | 7.8 | 12.6 | 3.2 |
| Ben Davis | 13.3 | 9.8 | 5.0 | 6.0 | 11.4 | 15.7 | 13.9 | 8.5 | 37.8 | 34.2 | 16.8 | 44.1 | 7.4 | 4.9 | 3.9 |
| Early Harvest (Prince's Harvest) | 2.8 | .9 | .9 | 3.1 | 4.7 | 3.9 | 3.7 | 1.8 | 2.2 | 2.8 | 6.4 | 2.0 | .8 | .7 | .7 |
| Fall Pippin | 1.7 | .7 | 1.7 | 3.1 | 1.8 | 1.5 | 1.8 | 1.6 | 1.1 | .4 | 2.4 | .7 | .8 | .8 | .6 |
| Fameuse (Snow) | 1.3 | 3.5 | 2.4 | .6 | .1 | .0 | .6 | 3.0 | 1.5 | .4 | .0 | .1 | .8 | .2 | .0 |
| Gano | 1.6 | .3 | .2 | .8 | .6 | 1.6 | 1.3 | .3 | 3.8 | 6.5 | .2 | 6.6 | .8 | 1.0 | .2 |
| Golden Russet | 1.4 | 1.7 | 2.0 | 2.5 | .3 | 1.6 | .9 | 3.7 | .7 | .3 | 1.0 | .1 | .3 | .6 | .1 |
| Gravenstein | 1.1 | 2.3 | .9 | 1.0 | .1 | .1 | .3 | .1 | .1 | .1 | .0 | ..... | 4.1 | 7.3 | 8.9 |

## APPLES—Continued.

TABLE 116.—*Approximate relative production of principal varieties of apples, expressed as percentages of a normal crop of all apples*—Continued.

| Variety. | United States. | Maine. | New York. | Pennsylvania. | Virginia. | West Virginia. | Ohio. | Michigan. | Illinois. | Missouri. | Kentucky. | Arkansas. | Washington. | Oregon. | California. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Grimes (Grimes Golden) | 2.2 | .2 | .1 | 2.6 | 2.6 | 4.6 | 5.0 | 1.2 | 4.9 | 3.6 | 2.6 | 2.1 | 1.6 | .4 | .1 |
| Horse (Yellow Horse) | .9 | ..... | ..... | ..... | 1.0 | .0 | .0 | .0 | .2 | .5 | 2.1 | 1.5 | ..... | .1 | ..... |
| Jonathan | 3.6 | .8 | .4 | 1.4 | 1.0 | 1.7 | 1.8 | 2.2 | 9.3 | 10.4 | 2.5 | 3.7 | 13.8 | 4.4 | 1.7 |
| Limbertwig (Red Limbertwig) | 1.6 | .0 | .0 | ..... | 2.5 | .8 | .3 | .0 | .6 | 1.5 | 4.0 | 5.8 | ..... | .2 | .3 |
| McIntosh (McIntosh Red) | .9 | 3.7 | 1.6 | .7 | .1 | .1 | .1 | .3 | .4 | .1 | .1 | ..... | .3 | .1 | .1 |
| Maiden Blush | 2.0 | .3 | 1.0 | 3.0 | 1.5 | 2.5 | 4.5 | 2.6 | 2.3 | 2.8 | 4.5 | 1.0 | .3 | .2 | .4 |
| Missouri (Missouri Pippin) | .8 | .0 | .0 | .0 | .2 | .1 | .1 | .1 | 1.2 | 3.0 | .5 | 1.4 | .5 | .1 | .9 |
| Northern Spy | 6.1 | 7.1 | 13.1 | 11.4 | .8 | 4.2 | 7.7 | 17.9 | 1.4 | 1.1 | 1.4 | .5 | 3.8 | 7.4 | .6 |
| Northwestern Greening | .9 | .3 | .9 | .4 | .0 | .4 | .6 | 1.9 | .3 | .3 | .4 | ..... | 1.0 | .1 | .2 |
| Oldenburg (Duchess of Oldenburg) | 1.9 | 2.9 | 2.2 | 1.1 | .1 | .5 | 1.0 | 5.0 | 1.7 | .5 | .1 | ..... | 1.1 | .3 | .1 |
| Red Astrachan | 1.9 | 3.9 | 2.1 | 3.5 | .8 | 2.1 | 2.7 | 2.8 | .8 | .8 | .3 | .5 | 1.7 | 2.2 | 3.3 |
| Red June (Carolina Red June) | 1.6 | ..... | .7 | .3 | 1.8 | 1.3 | .2 | .0 | 1.2 | 1.9 | 4.3 | 2.7 | 1.3 | 1.3 | 1.4 |
| Rhode Island Greening (Greening) | 4.7 | 4.1 | 14.8 | 5.5 | .3 | 1.4 | 5.7 | 5.4 | .8 | .3 | .2 | .6 | 2.2 | 2.6 | 2.7 |
| Rome Beauty | 3.1 | .1 | .3 | 2.1 | 1.2 | 18.7 | 10.8 | .2 | 3.8 | 1.7 | 9.6 | 1.8 | 12.2 | 5.6 | 2.4 |
| Stayman Winesap | 1.5 | .6 | .1 | 1.8 | 5.3 | 1.9 | 1.3 | .1 | .5 | 1.8 | 1.9 | 1.7 | 2.7 | 1.8 | .9 |
| Tolman (Talman Sweet) | 1.0 | 2.6 | 2.1 | 1.1 | .1 | .4 | .5 | 2.4 | .3 | .2 | .3 | ..... | .9 | ..... | .0 |
| Tompkins King (King of Tompkins Co.) | 1.4 | 2.4 | 4.1 | 1.5 | .0 | .5 | .6 | 2.1 | .1 | .1 | .0 | ..... | 2.7 | 5.1 | 1.1 |
| Wealthy | 2.2 | 5.4 | 1.8 | 1.2 | .0 | 1.1 | 1.2 | 3.7 | 1.6 | 1.3 | .4 | .1 | 1.5 | 1.1 | .1 |
| White Pearmain (White Winter Pearmain) | .5 | ..... | .1 | .0 | .2 | .2 | .1 | .0 | .2 | .3 | .3 | .1 | .6 | .5 | 7.5 |
| Winesap | 5.1 | .5 | .1 | 1.8 | 20.7 | 1.8 | 1.8 | .4 | 5.6 | 6.8 | 14.0 | 8.4 | 7.1 | 2.9 | 1.4 |
| Wolf River | .9 | 1.4 | .3 | .3 | .2 | .6 | .5 | 1.5 | .4 | .7 | .3 | ..... | .8 | 1.7 | .1 |
| Yellow Bellflower | 1.4 | 1.7 | .3 | 2.3 | .2 | 1.5 | 1.3 | 1.2 | .5 | 1.0 | .6 | .1 | 9 | 3.4 | 18.6 |
| Yellow Newtown (Albemarle; Newtown Pippin) | 1.6 | .0 | .2 | .6 | 7.0 | .3 | .4 | .3 | .2 | .1 | .2 | ..... | 2.9 | 11.3 | 28.7 |
| Yellow Transparent | 1.5 | 1.1 | .3 | 1.7 | 1.5 | 3.2 | 2.1 | 1.4 | 2.1 | 1.1 | 8.2 | .4 | 1.5 | 1.6 | .2 |
| York Imperial (Johnson Fine Winter) | 2.1 | ..... | .1 | 7.5 | 15.1 | 5.0 | 1.3 | .3 | .8 | 1.1 | .1 | .1 | .2 | .9 | .1 |
| Other varieties | 10.4 | 7.0 | 8.9 | 12.8 | 10.2 | 13.4 | 10.1 | 11.0 | 7.4 | 8.2 | 12.5 | 8.2 | 12.5 | 15.5 | 8.2 |
| Total | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |

NOTE.—In important apple-producing States not included in table, the principal varieties and their respective percentages of all apples in a normal crop are:

*Indiana.*—Ben Davis 22.8, Baldwin 7.2, Grimes Golden 6.7, Winesap 6.7, Maiden Blush 5.3, Rome Beauty 4.4, Northern Spy 4.2. *North Carolina.*—Limbertwig 14.3, Winesap, 12.2, Ben Davis 7.5, Early Harvest 7.2, Horse 7.2, Red June 5.9. *Tennessee.*—Winesap 14.1, Ben Davis 12.2, Limbertwig 12.1, Early Harvest 8.4, Horse 6.3, Red June 5.4. *Iowa.*—Ben Davis 15.2, Wealthy 12.4, Jonathan 10.3, Oldenburg 8.9, Grimes Golden 4.9, Northwestern Greening 4.3. *Kansas.*—Ben Davis 19.4, Winesap 15.3, Jonathan 13.8, Missouri Pippin 8.6, Gano 6.0, Maiden Blush 4.3. *Colorado.*—Ben Davis 26.3, Jonathan 18.3, Gano 7.8, Rome Beauty 4.8, Winesap 4.1. *Massachusetts.*—Baldwin 48.4, Rhode Island Greening 9.3, Gravenstein, 5.7, McIntosh Red 5.7, Northern Spy 5.1. *Nebraska.*—Ben Davis 21.3, Winesap 13.6, Jonathan 9.4, Wealthy 6.2, Oldenburg 5.8, Grimes Golden 4.8, Missouri Pippin 4.2, Gano 4.0. *Wisconsin.*—Oldenburg 14.7, Wealthy 13.7, Northwestern Greening 11.1, Fameuse (Snow) 8.0, Wolf River 7.5, Ben Davis 5.1, Golden Russet 4.2. *Maryland.*—Ben Davis 17.0, York Imperial 16.2, Baldwin 8.8, Winesap 7.6, Stayman Winesap 7.0, Arkansas 4.4, Early Harvest 4.2. *New Jersey.*—Baldwin 25.2, Ben Davis 14.5, Rome Beauty 5.0, Early Harvest 4.7, Rhode Island Greening 4.3, Northern Spy 4.2. *Vermont.*—Baldwin 15.1, Rhode Island Greening 12.8 Northern Spy 12.0, Fameuse (Snow) 8.1, McIntosh 6.1, Ben Davis 5.6, Yellow Bellflower 4.2. *Connecticut.*—Baldwin 42.2, Rhode Island Greening 16.9, Golden Russet 5.2. *New Hampshire.*—Baldwin 51.9, Rhode Island Greening 5.9, Northern Spy 5.2, McIntosh 4.4. *Idaho.*—Jonathan 21.3, Rome Beauty 16.6, Ben Davis 13.1, Gano 7.8, Winesap 4.6. *Oklahoma.*—Ben Davis 25.8, Missouri Pippin 12.1, Jonathan 8.2, Winesap 8.1, Arkansas Black 5.6, Gano 4.0. *Georgia.*—Horse 14.3, Ben Davis 12.2, Red June 10.0, Limbertwig 8.8, Winesap 7.6, Early Harvest 6.1, Arkansas Black 4.6.

## PEACHES.

### TABLE 117.—*Peaches: Production, and prices Sept. 15, by States, 1909–1915.*

[Production 1909 from census; production, 1910–1915, estimates of Bureau of Crop Estimates.]

| State. | Production, bushels (000 omitted). | | | | | | | Farm price per bushel (cents). | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1909 | 1910 | 1911 | 1912 | 1913 | 1914 | 1915 | 1910 | 1911 | 1912 | 1913 | 1914 | 1915 |
| New Hampshire | 23 | 55 | 50 | 30 | 40 | 3 | 58 | ...... | ...... | ...... | 190 | ...... | 150 |
| Massachusetts | 92 | 65 | 85 | 40 | 80 | 31 | 152 | ...... | 275 | 220 | 180 | 180 | 130 |
| Rhode Island | 18 | 15 | 20 | 13 | 27 | 14 | 29 | ...... | ...... | ...... | 175 | 170 | 103 |
| Connecticut | 270 | 300 | 250 | 120 | 200 | 142 | 335 | ...... | 200 | 221 | 147 | 175 | 96 |
| New York | 1,736 | 1,825 | 1,500 | 1,350 | 1,750 | 530 | 2,106 | 137 | 142 | 160 | 140 | 100 | 90 |
| New Jersey | 441 | 1,000 | 350 | 450 | 325 | 1,140 | 1,275 | 128 | 175 | 135 | 150 | 98 | 70 |
| Pennsylvania | 1,024 | 1,600 | 1,100 | 600 | 850 | 1,541 | 2,044 | 137 | 180 | 186 | 180 | 125 | 80 |
| Delaware | 17 | 125 | 40 | 75 | 45 | 608 | 842 | ...... | ...... | 150 | 125 | 95 | 39 |
| Maryland | 325 | 800 | 340 | 450 | 300 | 1,032 | 1,248 | 91 | 138 | 140 | 105 | 98 | 35 |
| Virginia | 243 | 1,150 | 320 | 1,000 | 300 | 911 | 1,300 | 99 | 138 | 96 | 150 | 100 | 80 |
| West Virginia | 329 | 650 | 230 | 750 | 120 | 886 | 1,164 | 112 | 154 | 112 | 210 | 105 | 75 |
| North Carolina | 1,344 | 2,000 | 450 | 2,250 | 650 | 1,863 | 1,955 | 85 | 124 | 93 | 120 | 95 | 90 |
| South Carolina | 643 | 1,150 | 650 | 1,050 | 420 | 1,106 | 864 | 102 | 128 | 105 | 125 | 110 | 100 |
| Georgia | 2,555 | 4,700 | 1,950 | 5,500 | 1,770 | 5,785 | 5,330 | 102 | 140 | 101 | 130 | 110 | 100 |
| Florida | 115 | 180 | 120 | 180 | 90 | 188 | 177 | 100 | 150 | 100 | ...... | 100 | 75 |
| Ohio | 1,036 | 1,250 | 1,700 | 1,000 | 860 | 1,653 | 2,399 | 160 | 140 | 144 | 200 | 140 | 97 |
| Indiana | 1,174 | 680 | 1,150 | 180 | 1,240 | 1,128 | 648 | 137 | 118 | 169 | 130 | 110 | 120 |
| Illinois | 1,223 | 150 | 2,600 | 80 | 2,200 | 1,755 | 874 | 165 | 84 | 146 | 115 | 105 | 110 |
| Michigan | 1,687 | 1,200 | 2,100 | 650 | 1,350 | 1,247 | 2,360 | 139 | 111 | 165 | 150 | 140 | 97 |
| Iowa | 23 | 10 | 140 | 20 | 400 | 472 | 112 | 217 | 152 | 133 | 135 | 135 | 150 |
| Missouri | 1,485 | 1,300 | 2,500 | 800 | 4,000 | 3,780 | 3,300 | 108 | 98 | 107 | 93 | 90 | 85 |
| Nebraska | 110 | 90 | 20 | 160 | 140 | 192 | 120 | 133 | 125 | 156 | 150 | 150 | 140 |
| Kansas | 25 | 600 | 200 | 500 | 220 | 1,700 | 2,516 | 105 | 124 | 100 | 150 | 120 | 100 |
| Kentucky | 1,623 | 1,050 | 1,050 | 1,700 | 2,000 | 1,980 | 1,320 | 121 | 109 | 94 | 90 | 75 | 95 |
| Tennessee | 1,579 | 1 550 | 400 | 3,000 | 900 | 2,640 | 2,460 | 92 | 125 | 77 | 110 | 78 | 80 |
| Alabama | 1,417 | 2,050 | 900 | 3,000 | 1,100 | 2,310 | 2,640 | 85 | 100 | 100 | 100 | 100 | 90 |
| Mississippi | 1,157 | 1,700 | 570 | 2,300 | 1,250 | 1,440 | 1,540 | 98 | 121 | 96 | 98 | 85 | 83 |
| Louisiana | 291 | 500 | 190 | 700 | 470 | 356 | 456 | 100 | 83 | 150 | 110 | 100 | 88 |
| Texas | 730 | 2,700 | 900 | 3,200 | 1,600 | 1,196 | 4,235 | 106 | 148 | 97 | 120 | 140 | 87 |
| Oklahoma | 358 | 1,040 | 460 | 1,500 | 700 | 220 | 2,408 | 95 | 128 | 68 | 120 | 130 | 57 |
| Arkansas | 1,902 | 1,950 | 2,300 | 4,700 | 3,300 | 3,180 | 5,940 | 100 | 107 | 78 | 90 | 87 | 63 |
| Colorado | 692 | 390 | 410 | 1,100 | 390 | 1,025 | 650 | 180 | 175 | 100 | 124 | 60 | 125 |
| New Mexico | 32 | 70 | 120 | 100 | 60 | 106 | 154 | 128 | 85 | 137 | 150 | 130 | 65 |
| Arizona | 50 | 42 | 52 | 55 | 50 | 60 | 60 | ...... | 225 | 215 | 200 | 175 | 150 |
| Utah | 143 | 200 | 210 | 300 | 260 | 380 | 212 | 140 | 183 | 106 | 115 | 71 | 95 |
| Nevada | 3 | 3 | 9 | 10 | 8 | 9 | 7 | ...... | ...... | ...... | ...... | ...... | ...... |
| Idaho | 19 | 60 | 70 | 90 | 70 | 120 | 162 | ...... | 154 | 134 | 120 | 100 | 70 |
| Washington | 84 | 320 | 260 | 340 | 310 | 486 | 506 | 90 | 106 | 76 | 110 | 96 | 80 |
| Oregon | 179 | 310 | 180 | 260 | 270 | 387 | 432 | 137 | 174 | 133 | 130 | 110 | 84 |
| California | 9,267 | 9,935 | 7,610 | 9,640 | 7,460 | 10,387 | 9,768 | 103 | 111 | 94 | 182 | 80 | 55 |
| United States. | [1] 35,470 | 44,765 | 33,556 | 49,243 | 37,635 | 54,109 | 64,218 | 115.1 | 128.7 | 110.0 | 136.3 | 102 2 | 81.1 |

[1] Includes 6,000 acres in other States.

## HOPS.

TABLE 118.—*Hops: Area and production of undermentioned countries, 1912–1914.*

| Country. | Area. | | | Production. | | |
|---|---|---|---|---|---|---|
| | 1912 | 1913 | 1914 | 1912 | 1913 | 1914 |
| NORTH AMERICA. | *Acres.* | *Acres.* | *Acres.* | *Pounds.* | *Pounds.* | *Pounds.* |
| United States [1] | (2) | (2) | (2) | 53,370,645 | 62,898,718 | 43,415,352 |
| Canada [3] | 1,164 | 1,164 | 1,164 | 1,208,450 | 1,208,450 | 1,208,450 |
| Total | ........... | ........... | ........... | 54,579,095 | 64,107,168 | 44,623,802 |
| EUROPE. | | | | | | |
| Austria-Hungary: | | | | | | |
| Austria | 50,171 | 50,062 | (2) | 44,413,872 | 18,879,533 | (2) |
| Hungary | 4,784 | 5,500 | (2) | 3,779,566 | 4,435,200 | (2) |
| Croatia-Slavonia | 1,030 | | | 232,806 | | |
| Total | 55,985 | 55,562 | (2) | 48,426,244 | 23,314,733 | (2) |
| Belgium | 5,642 | 5,943 | 6,140 | 10,167,836 | 7,395,331 | 7,560,000 |
| France | 6,998 | 7,272 | 6,748 | 8,757,774 | 8,028,492 | 7,034,000 |
| Germany | 66,633 | 66,836 | 68,410 | 45,334,292 | 23,408,222 | 55,227,408 |
| Russia | (2) | (2) | (2) | 14,083,992 | 16,973,016 | 14,083,992 |
| United Kingdom: England | 34,829 | 35,676 | 36,661 | 41,996,837 | 28,631,792 | 56,812,896 |
| Total | 194,484 | 195,586 | ........... | 168,766,975 | 107,751,586 | ........... |
| AUSTRALASIA. | | | | | | |
| Australia: | | | | | | |
| Victoria | 122 | 131 | 117 | 87,024 | 155,344 | 107,632 |
| South Australia | 3 | 5 | (2) | 2,240 | 2,240 | 2,300 |
| Tasmania | 1,029 | 1,247 | (2) | 1,057,952 | 1,920,576 | 2,000,000 |
| Total | 1,154 | 1,383 | ........... | 1,147,216 | 2,078,160 | 2,109,932 |
| Grand total | ........... | ........... | ........... | 224,493,286 | 173,936,914 | ........... |

[1] Commercial movement for years beginning July 1.
[2] No official statistics.
[3] Census of 1910.

TABLE 119.—*Hops: Total production of countries named in Table 118, 1895–1915.*

| Year. | Production. | Year. | Production. | Year. | Production. |
|---|---|---|---|---|---|
| | *Pounds.* | | *Pounds.* | | *Pounds.* |
| 1895 | 204,894,000 | 1902 | 170,083,000 | 1909 | 128,173,000 |
| 1896 | 168,509,000 | 1903 | 174,457,000 | 1910 | 188,951,000 |
| 1897 | 189,219,000 | 1904 | 178,802,000 | 1911 | 163,810,000 |
| 1898 | 166,100,000 | 1905 | 277,260,000 | 1912 | 224,493,000 |
| 1899 | 231,563,000 | 1906 | 180,998,000 | 1913 | 173,937,000 |
| 1900 | 174,683,000 | 1907 | 215,923,000 | 1914 | ............... |
| 1901 | 201,902,000 | 1908 | 230,220,000 | 1915 | ............... |

## HOPS—Continued.

### TABLE 120.—*Hops: Wholesale price per pound, 1900–1915.*

| Date. | New York. | | Cincinnati. | | Chicago. | | San Francisco. | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Choice State. | | Prime.[1] | | Pacific coast, good to choice.[2] | | Sacramento Valley, choice. | | Willamette Valley, choice.[3] | | Eastern Washington, choice. | |
| | Low. | High. | Low. | High. | Low. | High. | Low. | High. | Low. | High. | Low. | High. |
| | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* |
| 1900 | 12½ | 21 | 10 | 18 | 6½ | 18 | ...... | ...... | 6 | 16 | ...... | ...... |
| 1901 | 13 | 20 | 13¾ | 17$\frac{9}{16}$ | 12½ | 19 | ...... | ...... | 10 | 20 | ...... | ...... |
| 1902 | 14 | 38 | 14½ | 30 | 12½ | 31 | ...... | ...... | 10 | 28 | ...... | ...... |
| 1903 | 20½ | 37 | 24 | 29½ | 19 | 31 | ...... | ...... | 17 | 28 | ...... | ...... |
| 1904 | 32 | 41 | 28 | 37 | 28½ | 37 | ...... | ...... | 17½ | 32 | ...... | ...... |
| 1905 | 13 | 37 | 13½ | 33 | 10 | 34 | ...... | ...... | 9½ | 30 | ...... | ...... |
| 1906 | 11 | 25 | 12 | 18½ | 9 | 22 | ...... | ...... | 8 | 20 | ...... | ...... |
| 1907 | 12 | 23 | 12 | ...... | 6 | 18 | ...... | ...... | 5 | 13 | ...... | ...... |
| 1908 | 6 | 16 | 8 | ...... | 5 | 11 | ...... | ...... | 3 | 12½ | ...... | ...... |
| 1909 | 12 | 39 | 10 | 28 | 9 | 29 | ...... | ...... | ...... | ...... | ...... | ...... |
| 1910 | 21 | 35 | 15½ | 27½ | 14 | 26 | ...... | ...... | ...... | ...... | ...... | ...... |
| 1911 | 23 | 57 | ...... | ...... | 20 | 50 | ...... | ...... | ...... | ...... | ...... | ...... |
| 1912 | 22 | 56 | 22½ | 49 | 20 | 50 | 17 | 50 | 18½ | 50 | 18½ | 50 |
| 1913 | 17 | 48 | 18 | 32 | 15 | 31 | 18 | 28 | 18 | 30 | 19 | 30 |
| 1914 | 23 | 50 | 13½ | 27½ | 13 | 27 | 10 | 28 | 11 | 30 | 10 | 30 |
| **1915.** | | | | | | | | | | | | |
| January | 21 | 25 | 17 | 17 | 12 | 15 | 11½ | 12½ | 12 | 13 | 11 | 12 |
| February | 16 | 23 | 16½ | 16½ | 12 | 16 | 11½ | 14 | 12 | 15 | 11 | 14 |
| March | 16 | 17 | 17 | 17 | 12 | 16 | 13 | 15 | 14 | 16 | 13 | 15 |
| April | 15 | 17 | 17 | 17 | 12 | 18 | 9 | 15 | 10 | 16 | 10 | 15 |
| May | 13 | 15 | 17 | 17 | 11 | 15 | 9 | 10 | 10 | 11 | 10 | 11 |
| June | 13 | 14 | 16 | 16 | 10 | 13 | 9 | 10 | 10 | 11 | 10 | 11 |
| July | 13 | 14 | 16 | 16 | 10 | 14 | 9 | [4] 12 | 10 | [4] 12½ | 10 | [4] 12 |
| August | 13 | 14 | 16 | 16 | 12 | 16 | 11½ | 14 | 11½ | 16 | 11 | 15 |
| September | 13 | [4] 30 | 16 | 16 | 12 | 16 | 13 | 14 | 15 | 16 | 14 | 15 |
| October | 28 | 30 | 15½ | 15½ | 12 | 15 | 9 | 14 | 11 | 16 | 10 | 15 |
| November | 28 | 30 | 15½ | 15½ | 12 | 16 | 8 | 11 | 11 | 13 | 10 | 13 |
| December | 26 | 30 | 16 | 16 | 12 | 16 | 7½ | 11 | 10 | 13 | 10 | 13 |
| Year | 13 | 30 | 15½ | 17 | 10 | 18 | 7½ | 15 | 10 | 16 | 10 | 15 |

[1] Choice 1900–1907 and 1909–1913.

[2] Common to choice 1901–1903, prime to choice, 1907.

[3] Quotations are for all grades to 1912.

[4] New crop.

### TABLE 121.—*Hops: International trade, calendar years 1912–1914.*

[Lupulin and *hopfenmehl* (hop meal) are not included with hops in the data shown. See "General note," p. 417.]

EXPORTS.

[000 omitted.]

| Country. | 1912 | 1913 | 1914 (prelim.). | Country. | 1912 | 1913 | 1914 (prelim.). |
|---|---|---|---|---|---|---|---|
| | *Pounds.* | *Pounds.* | *Pounds.* | | *Pounds.* | *Pounds.* | *Pounds.* |
| Austria-Hungary | 28,182 | 15,306 | .......... | Russia | 2,294 | 3,873 | 253 |
| Belgium | 3,969 | 5,908 | .......... | United Kingdom | 1,318 | 1,263 | 1,117 |
| France | 590 | 340 | .......... | United States | 15,572 | 25,701 | 11,056 |
| Germany | 18,254 | 14,299 | .......... | Other countries | 239 | 306 | .......... |
| Netherlands | 535 | 2,704 | .......... | | | | |
| New Zealand | 277 | 498 | .......... | Total | 71,230 | 70,198 | .......... |

IMPORTS.

| Country. | 1912 | 1913 | 1914 (prelim.). | Country. | 1912 | 1913 | 1914 (prelim.). |
|---|---|---|---|---|---|---|---|
| Australia | 1,129 | 1,511 | .......... | Netherlands | 2,090 | 4,085 | .......... |
| Austria-Hungary | 487 | 1,150 | .......... | Russia | 1,625 | 1,165 | 228 |
| Belgium | 6,562 | 6,975 | .......... | Sweden | 1,206 | 1,018 | .......... |
| British India | 247 | 162 | 118 | Switzerland | 1,746 | 1,125 | .......... |
| British South Africa | 498 | 484 | 442 | United Kingdom | 26,356 | 27,562 | 9,362 |
| Canada | 1,667 | 1,723 | 1,613 | United States | 5,663 | 7,318 | 7,483 |
| Denmark | 1,235 | 751 | .......... | Other countries | 4,387 | 4,929 | .......... |
| France | 4,229 | 4,655 | .......... | | | | |
| Germany | 11,790 | 5,541 | .......... | Total | 70,917 | 70,149 | .......... |

## BEANS.

TABLE 122.—*Beans: Area and production of undermentioned countries, 1912–1914.*

| Country. | Area. | | | Production. | | |
|---|---|---|---|---|---|---|
| | 1912 | 1913 | 1914 | 1912 | 1913 | 1914 |
| NORTH AMERICA. | *Acres.* | *Acres.* | *Acres.* | *Bushels.* | *Bushels.* | *Bushels.* |
| United States | [1] 784,000 | (2) | (2) | [1] 11,145,000 | (2) | (2) |
| Canada: | | | | | | |
| Nova Scotia | 1,000 | 1,000 | 1,000 | 24,000 | 22,000 | 18,000 |
| New Brunswick | (3) | (3) | (3) | 7,000 | 4,000 | 6,000 |
| Quebec | 5,000 | 5,000 | 5,000 | 84,000 | 97,000 | 89,000 |
| Ontario | 46,000 | 40,000 | 38,000 | 801,000 | 670,000 | 684,000 |
| British Columbia | (3) | (3) | (3) | 5,000 | 8,000 | ... |
| Total Canada | 53,000 | 47,000 | 44,000 | 921,000 | 801,000 | 797,000 |
| Total | ... | ... | ... | ... | ... | ... |
| SOUTH AMERICA. | | | | | | |
| Argentina | 66,000 | 65,000 | (2) | (2) | (2) | (2) |
| Chile | 90,000 | 85,000 | 76,000 | 1,669,000 | 1,551,000 | 1,377,000 |
| EUROPE. | | | | | | |
| Austria-Hungary: | | | | | | |
| Austria [4] | 637,000 | 644,000 | (2) | 9,205,000 | 8,725,000 | (2) |
| Hungary [5] | 40,000 | (2) | (2) | 565,000 | (2) | (2) |
| Do.[6] | 1,471,000 | (2) | (2) | 8,457,000 | (2) | (2) |
| Croatia-Slavonia [5] | 25,000 | (2) | (2) | 272,000 | (2) | (2) |
| Do.[6] | 494,000 | (2) | (2) | 1,956,000 | (2) | (2) |
| Total | 2,667,000 | ... | ... | 20,455,000 | ... | ... |
| Belgium | 20,000 | (2) | (2) | 514,000 | (2) | (2) |
| Bulgaria | 212,000 | (2) | (2) | 2,482,000 | (2) | (2) |
| Denmark [4] | 10,000 | (2) | (2) | 240,000 | 255,000 | 250,000 |
| France | 558,000 | 583,000 | 547,000 | 9,739,000 | 10,235,000 | 9,354,000 |
| Italy | 2,860,000 | 2,838,000 | 2,705,000 | 19,922,000 | 23,159,000 | 16,997,000 |
| Luxemburg | 3,000 | 3,000 | (2) | 55,000 | 61,000 | (2) |
| Netherlands | 59,000 | 60,000 | 59,000 | 1,939,000 | 1,821,000 | 1,946,000 |
| Roumania [5] | 103,000 | 108,000 | 160,000 | 1,109,000 | 1,303,000 | 2,114,000 |
| Do.[6] | 1,316,000 | 1,365,000 | 1,409,000 | 3,528,000 | 4,454,000 | 3,669,000 |
| Russia: [7] | | | | | | |
| Russia proper | 1,088,000 | 1,111,000 | 1,195,000 | 12,011,000 | 12,199,000 | 8,481,000 |
| Poland | 33,000 | 25,000 | 25,000 | 611,000 | 439,000 | (2) |
| Northern Caucasia | 5,000 | 6,000 | 9,000 | 70,000 | 79,000 | 94,000 |
| Total Russia, European | 1,126,000 | 1,142,000 | 1,229,000 | 12,692,000 | 12,717,000 | ... |
| Serbia | [4] 30,000 | (2) | (2) | [4] 1,491,000 | (2) | (2) |
| Spain | 1,120,000 | 1,189,000 | 1,149,000 | 10,534,000 | 11,737,000 | 12,527,000 |
| Sweden | (2) | 5,000 | 6,000 | 176,000 | 164,000 | 75,000 |
| United Kingdom: | | | | | | |
| England | 270,000 | 258,000 | 283,000 | 7,636,000 | 7,517,000 | 8,635,000 |
| Wales | 1,000 | 1,000 | 1,000 | 29,000 | 31,000 | 35,000 |
| Scotland | 9,000 | 6,000 | 6,000 | 306,000 | 230,000 | 235,000 |
| Ireland | 1,000 | 1,000 | 1,000 | 61,000 | 64,000 | 56,000 |
| Total United Kingdom | 281,000 | 266,000 | 291,000 | 8,032,000 | 7,842,000 | 8,961,000 |
| ASIA. | | | | | | |
| India: | | | | | | |
| British [4] | 13,818,000 | 11,707,000 | 6,104,000 | 162,624,000 | 124,096,000 | 48,309,000 |
| Native States | 4,041,000 | 3,522,000 | (2) | (2) | (2) | (2) |
| Total | 17,859,000 | 15,229,000 | ... | ... | ... | ... |
| Japan | 1,603,000 | 1,615,000 | (2) | 25,077,000 | 20,818,000 | (2) |
| Formosa [4] | 82,000 | 84,000 | (2) | 526,000 | 703,000 | (2) |
| Russia (9 governments) [7] | 2,000 | 3,000 | 3,000 | 12,000 | 18,000 | 34,000 |
| AFRICA. | | | | | | |
| Algeria | 136,000 | (2) | (2) | 1,022,000 | (2) | (2) |
| Egypt | 537,000 | 496,000 | (2) | (2) | (2) | (2) |

[1] Census of 1909.
[2] No official statistics.
[3] Less than 500 acres.
[4] Includes other pulse.
[5] Grown alone.
[6] Grown with corn.
[7] Includes lentils.

## BEANS—Continued.

TABLE 122.—*Beans: Area and production of undermentioned countries, 1912–1914*—Continued.

| Country. | Area. | | | Production. | | |
|---|---|---|---|---|---|---|
| | 1912 | 1913 | 1914 | 1912 | 1913 | 1914 |
| AUSTRALASIA. | | | | | | |
| Australia: | *Acres.* | *Acres.* | *Acres.* | *Bushels.* | *Bushels.* | *Bushels.* |
| Queensland | (1) | (1) | (1) | 2,000 | 3,000 | (1) |
| New South Wales | (1) | (1) | (1) | 20,000 | 16,000 | (1) |
| Victoria | 12,000 | 12,000 | 12,000 | 187,000 | 240,000 | 213,000 |
| South Australia | 12,000 | 9,000 | 9,000 | 162,000 | 132,000 | 122,000 |
| Western Australia | 1,000 | 1,000 | (1) | 5,000 | 8,000 | (1) |
| Tasmania | 24,000 | 18,000 | (1) | 460,000 | 476,000 | (1) |
| Total Australia | 49,000 | 40,000 | ........... | 836,000 | 875,000 | ......... |

[1] No official statistics.

TABLE 123.—*Beans: Wholesale price per bushel, 1900–1915.*

| Date. | Boston. | | Chicago. | | Detroit. | | San Francisco. | |
|---|---|---|---|---|---|---|---|---|
| | Pea. | | Pea. | | Pea. | | Small white (per 100 lbs.). | |
| | Low. | High. | Low. | High. | Low. | High. | Low. | High. |
| 1900 | ....... | ....... | $1.65 | $2.25 | $1.55 | $2.10 | $2.85 | $4.50 |
| 1901 | $2.00 | $2.75 | .90 | 2.80 | 1.66 | 2.40 | 2.00 | 5.00 |
| 1902 | 1.60 | 2.55 | .85 | 2.49 | 1.28 | 1.98 | 3.30 | 4.65 |
| 1903 | 2.10 | 2.45 | .90 | 2.40 | 1.82 | 2.35 | 2.40 | 3.40 |
| 1904 | 1.72½ | 2.20 | .90 | 2.05 | 1.58 | 1.98 | 2.75 | 3.32½ |
| 1905 | 1.75 | 2.00 | 1.00 | 1.85 | 1.49 | 1.85 | 2.75 | 3.60 |
| 1906 | 1.50 | 1.80 | 1.10 | 1.65 | 1.27 | 1.61 | ....... | ....... |
| 1907 | 1.42 | 2.45 | 1.10 | 2.65 | 1.28 | 2.25 | 2.60 | 3.60 |
| 1908 | 2.30 | 2.75 | 1.65 | 2.70 | 2.00 | 2.65 | 3.40 | 4.75 |
| 1909 | 2.25 | 2.75 | 1.75 | 2.67 | 2.00 | 2.55 | 4.00 | 7.50 |
| 1910 | 2.25 | 2.70 | 1.85 | 2.78 | 1.92 | 2.40 | 3.25 | 4.85 |
| 1911 | 2.05 | 2.65 | 1.76 | 2.57 | 1.87 | 2.40 | 3.00 | 4.20 |
| 1912 | 2.55 | 3.10 | 1.90 | 3.20 | 2.15 | 2.70 | 4.00 | 4.80 |
| 1913 | 2.15 | 2.60 | 1.15 | 2.50 | 1.75 | 2.20 | 4.50 | 5.85 |
| 1914 | 2.10 | 3.10 | 1.60 | 3.10 | 1.80 | 2.90 | 4.00 | 6.00 |
| 1915. | | | | | | | | |
| January | 2.95 | 3.25 | 2.40 | 3.25 | 2.70 | 3.05 | 4.50 | 5.50 |
| February | 3.30 | 3.50 | 3.00 | 3.50 | 3.00 | 3.20 | 5.50 | 5.70 |
| March | 3.15 | 3.40 | 3.00 | 3.50 | 2.85 | 3.05 | 5.50 | 5.70 |
| April | 3.10 | 3.30 | 2.80 | 3.25 | 2.15 | 3.00 | 5.50 | 5.70 |
| May | 3.20 | 3.30 | 2.90 | 3.25 | 3.00 | 3.05 | 5.50 | 5.70 |
| June | 3.15 | 3.30 | 2.95 | 3.25 | 2.90 | 3.10 | 4.85 | 5.70 |
| July | 3.00 | 3.15 | 2.62 | 3.25 | 2.65 | 2.90 | 4.85 | 4.85 |
| August | 2.85 | 3.15 | 2.62 | 3.00 | 2.60 | 3.00 | 4.50 | 4.85 |
| September | 3.20 | 3.30 | 2.62 | 3.25 | 2.95 | 3.10 | 4.50 | 4.60 |
| October | 3.10 | 3.90 | 2.75 | 4.00 | 3.15 | 3.50 | 4.60 | 5.50 |
| November | 3.75 | 4.10 | 3.25 | 4.10 | 3.30 | 3.60 | 5.50 | 6.15 |
| December | 3 95 | 4.10 | 3.70 | 4.10 | 3.55 | 3.60 | 6.10 | 6.40 |
| Year | 2.85 | 4.10 | 2.40 | 4.10 | 2.15 | 3.60 | 4.50 | 6.40 |

## PEAS.

TABLE 124.—*Peas: Area and production of undermentioned countries, 1912–1914.*

| Country. | Area. | | | Production. | | |
|---|---|---|---|---|---|---|
| | 1912 | 1913 | 1914 | 1912 | 1913 | 1914 |
| **NORTH AMERICA.** | *Acres.* | *Acres.* | *Acres.* | *Bushels.* | *Bushels.* | *Bushels.* |
| United States | [1] 1,302,000 | (2) | (2) | [1] 7,110,000 | (2) | (2) |
| Canada: | | | | | | |
| Prince Edward Island | (3) | (3) | (3) | 2,000 | 2,000 | 3,000 |
| Nova Scotia | (3) | (3) | (3) | 5,000 | 7,000 | 4,000 |
| New Brunswick | 1,000 | 1,000 | (3) | 10,000 | 11,000 | 10,000 |
| Quebec | 30,000 | 26,000 | 24,000 | 449,000 | 451,000 | 432,000 |
| Ontario | 226,000 | 190,000 | 179,000 | 3,374,000 | 3,431,000 | 2,864,000 |
| Manitoba | (3) | (3) | (3) | 10,000 | .......... | .......... |
| Saskatchewan | (3) | (3) | (3) | 11,000 | 7,000 | .......... |
| Alberta | (3) | (3) | (3) | 9,000 | 8,000 | 8,000 |
| British Columbia | 1,000 | 1,000 | 1,000 | 43,000 | 35,000 | 41,000 |
| Total Canada | 260,000 | 219,000 | 206,000 | 3,913,000 | 3,952,000 | 3,362,000 |
| **SOUTH AMERICA.** | | | | | | |
| Chile [4] | 29,000 | 35,000 | 27,000 | 528,000 | 501,000 | 373,000 |
| **EUROPE.** | | | | | | |
| Austria | (5) | (5) | (5) | (5) | (5) | (5) |
| Hungary [6] | 33,000 | (2) | (2) | 425,000 | (2) | (2) |
| Croatia-Slavonia [6] | 11,000 | (2) | (2) | 154,000 | (2) | (2) |
| Belgium [7] | 12,000 | (2) | (2) | 409,000 | (2) | (2) |
| France [6] | 73,000 | 66,000 | 61,000 | 1,277,000 | 1,178,000 | 1,116,000 |
| Italy [4] | (2) | (2) | (2) | 3,491,000 | 4,167,000 | 3,638,000 |
| Luxemburg [6] | 2,000 | 2,000 | (3) | 26,000 | 28,000 | (2) |
| Netherlands | 64,000 | 68,000 | 65,000 | 1,868,000 | 1,488,000 | 1,871,000 |
| Roumania [6] | 46,000 | 61,000 | 56,000 | 678,000 | 1,076,000 | 869,000 |
| Russia: | | | | | | |
| Russia proper | 2,138,000 | 2,265,000 | 2,206,000 | 27,080,000 | 26,930,000 | 17,329,000 |
| Poland | 368,000 | 367,000 | 361,000 | 4,978,000 | 5,776,000 | (2) |
| Northern Caucasia | 6,000 | 5,000 | 5,000 | 70,000 | 82,000 | 72,000 |
| Total Russia, European | 2,512,000 | 2,637,000 | 2,572,000 | 32,128,000 | 32,788,000 | .......... |
| Serbia | (5) | (2) | (2) | 70,000 | (2) | (2) |
| Spain [4] | 1,204,000 | 1,244,000 | 1,268,000 | 9,885,000 | 9,298,000 | 11,016,000 |
| Sweden | (2) | 56,000 | 57,000 | 1,069,000 | 1,317,000 | 717,000 |
| United Kingdom: | | | | | | |
| England | 172,000 | 127,000 | 129,000 | 4,007,000 | 3,470,000 | 2,960,000 |
| Wales | 1,000 | (3) | (3) | 15,000 | 10,000 | 10,000 |
| Scotland | (3) | (3) | (3) | 18,000 | 5,000 | 5,000 |
| Ireland | (3) | (3) | (3) | 8,000 | 7,000 | 9,000 |
| Total United Kingdom | 174,000 | 128,000 | 130,000 | 4,048,000 | 3,492,000 | 2,993,0 0 |
| **ASIA.** | | | | | | |
| Japan | 90,000 | 106,000 | (2) | 1,914,000 | 1,935,000 | (2) |
| Russia (9 Governments) | 72,000 | 75,000 | 82,000 | 555,000 | 775,000 | 997,000 |
| **AFRICA.** | | | | | | |
| Algeria | 26,000 | (2) | (2) | 277,000 | (2) | (2) |
| **AUSTRALASIA.** | | | | | | |
| Australia | (5) | (5) | (5) | (5) | (5) | (5) |
| New Zealand | 20,000 | 20,000 | 14,000 | 666,000 | 524,000 | 453,000 |

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[1] Census of 1909.
[2] No official statistics.
[3] Less than 500 acres.
[4] Includes chick peas, lentils, and vetches.
[5] Included under beans.
[6] Includes lentils.
[7] Includes vetches.

## SUGAR.

TABLE 125.—*Sugar: Production in the United States and its possessions, 1856–57 to 1915–16.*[1]

[Data for 1912-13 and subsequently beet sugar, also Louisiana and Hawaii cane sugar, estimated by United States Department of Agriculture; Porto Rico, by Treasury Department of Porto Rico; Philippine Islands, exports for years ending June 30. For sources of data for earlier years, see Yearbook for 1912, p. 650. A short ton is 2,000 pounds.]

| Year. | Beet sugar (chiefly refined). | Cane sugar (chiefly raw). | | | | | Total. |
|---|---|---|---|---|---|---|---|
| | | Louisiana. | Other States.[2] | Porto Rico. | Hawaii. | Philippine Islands. | |
| Average: | *Short tons.* | *Short tons.* | *Short tons.* | *Short tons.* | *Short tons.* | *Short tons.* | *Short tons.* |
| 1856-7 to 1860-61 | .......... | 132,402 | 5,978 | 75,364 | .......... | 46,446 | 260,190 |
| 1861-62 to 1865-66 | 269 | 74,036 | 1,945 | 71,765 | .......... | 54,488 | 202,503 |
| 1866-67 to 1870-71 | 448 | 44,768 | 3,818 | 96,114 | .......... | 81,485 | 226,633 |
| 1871-72 to 1875-76 | 403 | 67,341 | 4,113 | 87,606 | (³) | 119,557 | 279,020 |
| 1876-77 to 1880-81 | 470 | 104,920 | 5,327 | 76,579 | 27,040 | 169,067 | 383,403 |
| 1881-82 to 1885-86 | 692 | 124,868 | 7,280 | 87,441 | 76,075 | 189,277 | 485,633 |
| 1886-87 to 1890-91 | 1,922 | 163,049 | 8,439 | 70,112 | 125,440 | 186,129 | 555,091 |
| 1891-92 to 1895-96 | 19,406 | 268,655 | 6,634 | 63,280 | 162,538 | 286,629 | 807,142 |
| 1896-97 to 1900-1901 | 58,287 | 282,399 | 4,405 | 61,202 | 282,585 | 134,722 | 823,690 |
| 1901-2 to 1905-6 | 239,730 | 352,053 | 12,126 | 141,478 | 403,308 | 108,978 | 1,257,673 |
| 1906-7 to 1910-11 | 479,153 | 348,544 | 13,664 | 282,136 | 516,041 | 145,832 | 1,785,370 |
| 1901-2 | 184,606 | 360,277 | 4,048 | 103,152 | 355,611 | 75,011 | 1,082,705 |
| 1902-3 | 218,406 | 368,734 | 4,169 | 100,576 | 437,991 | 123,108 | 1,252,984 |
| 1903-4 | 210,604 | 255,894 | 22,176 | 138,096 | 367,475 | 82,855 | 1,107,100 |
| 1904-5 | 242,113 | 398,195 | 16,800 | 151,088 | 426,248 | 125,271 | 1,359,715 |
| 1905-6 | 312,921 | 377,162 | 13,440 | 214,480 | 429,213 | 138,645 | 1,485,861 |
| 1906-7 | 483,612 | 257,600 | 14,560 | 206,864 | 440,017 | 132,602 | 1,585,255 |
| 1907-8 | 463,628 | 380,800 | 13,440 | 230,095 | 521,123 | 167,242 | 1,776,328 |
| 1908-9 | 425,884 | 397,600 | 16,800 | 277,093 | 535,156 | 123,876 | 1,776,409 |
| 1909-10 | 512,469 | 364,000 | 11,200 | 346,786 | 517,090 | 140,783 | 1,892,328 |
| 1910-11 | 510,172 | 342,720 | 12,320 | 349,840 | 566,821 | 164,658 | 1,946,531 |
| 1911-12 | 599,500 | 352,874 | 8,000 | 371,076 | 595,038 | 205,046 | 2,131,534 |
| 1912-13 | 692,556 | 153,573 | 9,000 | 398,004 | 546,524 | 234,000 | 2,033,657 |
| 1913-14 | 733,401 | 292,698 | 7,800 | 351,666 | 612,000 | 235,000 | 2,232,565 |
| 1914-15 | 722,054 | 242,700 | 3,920 | .......... | .......... | 206,000 | .......... |
| 1915-16 (preliminary) | 862,800 | .......... | 3,360 | .......... | .......... | .......... | .......... |

[1] Census returns give production of beet sugar for 1899 as 81,729 short tons; for 1904, 253,921; 1909, 501,682; production of cane sugar in Louisiana for 1839, 59,974 short tons; 1849, 226,001 hogsheads; 1859, 221,726 hogsheads; 1869, 80,706 hogsheads; 1879, 171,706 hogsheads; 1889, 146,062 short tons; 1898, 278,497 short tons; 1899, 159,583; and 1909, 325,516 short tons; cane sugar in other States, 1839, 491 short tons; in 1849 21,576 hogsheads; in 1859, 9,256 hogsheads; in 1869, 6,337 hogsheads; in 1879, 7,166 hogsheads; in 1889, 4,580 short tons; in 1899, 1,691 and in 1909, 8,687 short tons.

[2] Includes Texas only, subsequent to 1902-3. Unofficial returns.

[3] Complete data not available for this period. Production in 1878-79, 1,254 short tons; in 1879-80, 1,304 short tons.

## SUGAR—Continued.

TABLE 126.—*Sugar beets and beet sugar: Production in the United States, 1901–1915.*

| Year of beet crop, and State.[1] | Number of factories. | Average length of campaign. | Sugar made (chiefly refined). | Sugar beets used: Area harvested. | Sugar beets used: Average yield per acre. | Sugar beets used: Quantity worked. | Sugar beets used: Average price per ton. | Analysis of beets: Percentage of sucrose.[2] | Analysis of beets: Purity coefficient.[3] | Recovery of sucrose.[4] Percentage of weight of beets. | Recovery of sucrose.[4] Percentage of total sucrose in beets. | Loss.[5] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *Number.* | *Days.* | *Short tons.* | *Acres.* | *Short tons.* | *Short tons.* | *Dolls.* | *Per cent.* | *Per cent.* | *Per cent.* | *Per cent.* | *Per cent.* |
| 1901 | 36 | 88 | 184,606 | 175,083 | 9.63 | 1,685,689 | 4.50 | 14.8 | 82.20 | 10.95 | 73.99 | 3.85 |
| 1902 | 41 | 94 | 218,406 | 216,400 | 8.76 | 1,895,812 | 5.03 | 14.6 | 83.30 | 11.52 | 78.90 | 3.08 |
| 1903 | 49 | 75 | 240,604 | 242,576 | 8.56 | 2,076,494 | 4.97 | 15.1 | ...... | 11.59 | 76.75 | 3.51 |
| 1904 | 48 | 78 | 242,113 | 197,784 | 10.47 | 2,071,539 | 4.95 | 15.3 | 83.10 | 11.69 | 76.41 | 3.61 |
| 1905 | 52 | 77 | 312,921 | 307,364 | 8.67 | 2,665,913 | 5.00 | 15.3 | 83.00 | 11.74 | 76.73 | 3.56 |
| 1906 | 63 | 105 | 483,612 | 376,074 | 11.26 | 4,236,112 | 5.10 | 14.9 | 82.20 | 11.42 | 76,64 | 3.48 |
| 1907 | 63 | 89 | 463,628 | 370,984 | 10.16 | 3,767,871 | 5.20 | 15.8 | 83.60 | 12.30 | 77.85 | 3.50 |
| 1908 | 62 | 74 | 425,884 | 364,913 | 9.36 | 3,414,891 | 5.35 | 15.74 | 83.50 | 12.47 | 79.22 | 3.27 |
| 1909 | 65 | 83 | 512,469 | 420,262 | 9.71 | 4,081,382 | ...... | 16.10 | 84.10 | 12.56 | 78.01 | 3.54 |
| 1910 | 61 | 83 | 510,172 | 398,029 | 10.17 | 4,047,292 | ...... | 16.35 | 84.35 | 12.61 | 77.13 | 3.74 |
| 1911 | 66 | 94 | 599,500 | 473,877 | 10.68 | 5,062,333 | 5.50 | 15.89 | ...... | 11.84 | 74.51 | 4.05 |
| 1912 | 73 | 86 | 692,556 | 555,300 | 9.41 | 5,224,377 | 5.82 | 16.31 | 84.49 | 13.26 | 81.12 | 3.05 |
| 1913 | 71 | 85 | 733,401 | 580,006 | 9.76 | 5,659,462 | 5.69 | 15.78 | 83.22 | 12.96 | 82.13 | 2.82 |
| 1914 | 60 | 85 | 722,054 | 483,400 | 10.9 | 5,288,500 | 5.45 | 16.38 | 83.89 | 13.65 | 83.33 | 2.73 |
| 1915 | 67 | ...... | 862,800 | 624,000 | 10.4 | 6,462,000 | 5.54 | ...... | ...... | 13.4 | ...... | ...... |
| 1915. Preliminary. | | | | | | | | | | | | |
| California | 11 | ...... | 203,500 | 124,200 | 10.0 | 1,238,000 | 5.67 | ...... | ...... | 16.4 | ...... | ...... |
| Colorado | 14 | ...... | 235,000 | 160,800 | 11.3 | 1,820.000 | 5.68 | ...... | ...... | 12.9 | ...... | ...... |
| Idaho | 4 | ...... | 52,700 | 35,900 | 10.4 | 375,000 | 5.00 | ...... | ...... | 14.1 | ...... | ...... |
| Michigan | 15 | ...... | 129,300 | 123,300 | 8.7 | 1,071,000 | 5.90 | ...... | ...... | 12.1 | ...... | ...... |
| Ohio | 4 | ...... | 32,100 | 26,900 | 10.7 | 289,000 | 5.01 | ...... | ...... | 11.1 | ...... | ...... |
| Utah | 8 | ...... | 87,300 | 59,400 | 11.6 | 691,000 | 5.00 | ...... | ...... | 12.6 | ...... | ...... |
| Other States | 11 | ...... | 122,900 | 93,500 | 10.5 | 978,000 | 5.47 | ...... | ...... | 12.6 | ...... | ...... |
| United States | 67 | ...... | 862,800 | 624,000 | 10.4 | 6,462,000 | 5.54 | ...... | ...... | 13.4 | ...... | ...... |

[1] Acreage and production of beets are credited, as in former reports, to the State in which the beets were made into sugar.

[2] Based upon weight of beets.

[3] Percentage of sucrose (pure sugar) in the total soluble solids of the beets.

[4] Percentage of sucrose actually extracted by factories.

[5] Percentage of sucrose (based upon weight of beets) remaining in molasses and pulp.

TABLE 127.—*Cane-sugar production of Louisiana, 1912–1914.*

| Parish. | Factories in operation. 1912 | Factories in operation. 1913 | Factories in operation. 1914 | Sugar made. 1912 | Sugar made. 1913 | Sugar made. 1914 | Cane used for sugar. 1912 | Cane used for sugar. 1913 | Cane used for sugar. 1914 |
|---|---|---|---|---|---|---|---|---|---|
| | *No.* | *No.* | *No.* | *Short tons.* | *Short tons.* | *Short tons.* | *Short tons.* | *Short tons.* | *Short tons.* |
| Ascension | 7 | 4 | 3 | 8,342 | 10,808 | 5,800 | 124,934 | 163,000 | 84,000 |
| Assumption | 16 | 17 | 17 | 14,457 | 28,664 | 22,500 | 243,864 | 462,000 | 331,000 |
| Iberia | 9 | 10 | 7 | 10,999 | 15,925 | 8,000 | 140,932 | 204,000 | 97,000 |
| Iberville | 11 | 14 | 15 | 7,942 | 19,187 | 18,900 | 141,581 | 315,000 | 283,000 |
| Lafourche | 9 | 13 | 13 | 11,728 | 35,021 | 34,300 | 191,714 | 535,000 | 447,000 |
| St. James | 10 | 17 | 16 | 9,368 | 19,970 | 16,900 | 192,537 | 327,000 | 258,000 |
| St. John | 5 | 8 | 8 | 11,289 | 13,596 | 13,900 | 161,790 | 236,000 | 207,000 |
| St. Martin | 3 | 3 | 3 | 5,382 | 8,114 | 5,000 | 62,165 | 103,000 | 56,000 |
| St. Mary | 15 | 22 | 20 | 25,597 | 54,689 | 38,000 | 291,387 | 663,000 | 431,000 |
| Terrebonne | 14 | 13 | 13 | 14,463 | 24,631 | 23,900 | 191,984 | 352,000 | 295,000 |
| West Baton Rouge | 10 | 10 | 11 | 9,328 | 15,805 | 16,300 | 127,196 | 225,000 | 214,000 |
| Lafayette and Vermilion | 6 | 6 | 6 | 14,547 | 23,104 | 14,900 | 164,580 | 276,000 | 163,000 |
| Other[1] | 11 | 16 | 17 | 10,131 | 23,684 | 24,300 | 127,910 | 353,000 | 333,000 |
| Total Louisiana | 126 | 153 | 149 | 153,573 | 292,698 | 242,700 | 2,162,574 | 4,214,000 | 3,199,000 |

[1] Avoyelles, Rapides, St. Landry, East Baton Rouge, Pointe Coupee, West Feliciana, Jefferson, Orleans, Plaquemines, and St. Charles.

NOTE.—The average yield of cane per acre in Louisiana was 11 tons in 1912, 17 in 1913, 15 in 1914.

## SUGAR—Continued.

### Table 128.—*Cane-sugar production of Hawaii, 1912–1914.*

| Island, and year ending Sept. 30. | Factories in operation. | Average length of campaign. | Sugar made. | Cane used for sugar. | | | Average extraction of sugar. | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Area harvested. | Average yield per acre. | Production. | Per cent of cane. | Per short ton of cane. | Per acre of cane. |
| | *No.* | *Days.* | *Short tons.* | *Acres.* | *Short tons.* | *Short tons.* | *Per cent.* | *Pounds.* | *Pounds.* |
| Hawaii: | | | | | | | | | |
| 1914 | 23 | 174 | 213,000 | 51,000 | 36 | 1,854,000 | 11.49 | 230 | 8,353 |
| 1913 | 24 | 170 | 197,212 | 53,600 | 32 | 1,703,000 | 11.58 | 232 | 7,364 |
| 1912 | 24 | 204 | 209,914 | 52,900 | 34 | 1,799,000 | 11.67 | 233 | 7,936 |
| Kauai: | | | | | | | | | |
| 1914 | 9 | 214 | 121,000 | 21,600 | 50 | 1,089,000 | 11.11 | 222 | 11,204 |
| 1913 | 9 | 198 | 100,340 | 20,800 | 42 | 841,000 | 11.93 | 239 | 9,665 |
| 1912 | 9 | 206 | 96,845 | 18,900 | 43 | 807,000 | 12.00 | 240 | 10,248 |
| Maui: | | | | | | | | | |
| 1914 | 7 | 167 | 145,000 | 19,400 | 54 | 1,054,000 | 13.76 | 275 | 14,948 |
| 1913 | 7 | 152 | 124,820 | 19,700 | 47 | 929,000 | 13.44 | 269 | 12,684 |
| 1912 | 7 | 192 | 148,740 | 19,400 | 55 | 1,074,000 | 13.85 | 277 | 15,334 |
| Oahu: | | | | | | | | | |
| 1914 | 7 | 188 | 133,000 | 20,700 | 44 | 903,000 | 14.73 | 295 | 12,850 |
| 1913 | 10 | 157 | 124,152 | 20,500 | 49 | 1,003,000 | 12.38 | 248 | 12,153 |
| 1912 | 10 | 200 | 139,539 | 21,800 | 50 | 1,094,000 | 12.75 | 255 | 12,802 |
| Territory of Hawaii: | | | | | | | | | |
| 1914 | 46 | 183 | 612,000 | 112,700 | 43 | 4,900,000 | 12.49 | 250 | 10,861 |
| 1913 | 50 | 169 | 546,524 | 114,600 | 39 | 4,476,000 | 12.21 | 244 | 9,544 |
| 1912 | 50 | 200 | 595,038 | 113,000 | 42 | 4,774,000 | 12.46 | 249 | 10,532 |

### Table 129.—*Sugar: Wholesale price per pound, on New York market, 1900–1915.*

| Date. | Raw. | | | | Refined. | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Molasses, 89° polarization.[1] | | Centrifugal, 96° polarization. | | Cut loaf. | | Powdered. | | Granulated, fine or standard. | | Soft sugar No. 1. | | Soft sugar No 15. | |
| | Low. | High. | Low. | High. | Low. | High. | Low. | High. | Low. | High. | Low. | High. | Low. | High. |
| | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* |
| 1900 | 3.81 | 4.88 | 4.25 | 5.00 | 5.35 | 6.55 | 5.05 | 6.25 | 4.95 | 6.15 | 4.00 | 5.80 | 4.15 | 5.20 |
| 1901 | 3.16 | 3.88 | 3.62 | 4.38 | 5.15 | 6.10 | 4.75 | 5.70 | 4.65 | 5.00 | 4.30 | 5.25 | 3.65 | 4.00 |
| 1902 | 2.44 | 3.50 | 3.25 | 4.00 | 5.05 | 5.55 | 4.55 | 5.05 | 4.45 | 4.95 | 4.20 | 4.70 | 3.65 | 4.15 |
| 1903 | 3.00 | 3.44 | 3.50 | 3.94 | 4.95 | 5.60 | 4.55 | 5.10 | 4.45 | 5.00 | 4.20 | 4.75 | 3.65 | 4.20 |
| 1904 | 2.81 | 4.38 | 3.31 | 4.88 | 5.10 | 6.45 | 4.50 | 5.85 | 4.40 | 5.75 | 4.15 | 5.40 | 3.60 | 4.60 |
| 1905 | 2.75 | 4.75 | 3.75 | 5.25 | 5.30 | 6.85 | 4.70 | 6.25 | 4.60 | 6.15 | 4.25 | 5.80 | 3.55 | 5.00 |
| 1906 | 2.62 | 3.56 | 3.33 | 4.25 | 5.20 | 5.70 | 4.00 | 5.10 | 4.50 | 5.00 | 4.25 | 4.70 | 3.65 | 4.05 |
| 1907 | 2.88 | 3.63 | 3.38 | 3.98 | 5.40 | 5.70 | 4.80 | 5.10 | 4.70 | 5.00 | 4.45 | 4.75 | 3.85 | 4.15 |
| 1908 | 3.17 | 3.92 | 3.67 | 4.48 | 5.45 | 6.30 | 4.75 | 5.60 | 4.65 | 5.50 | 4.40 | 5.25 | 3.80 | 4.05 |
| 1909 | 2.86 | 3.70 | 3.61 | 4.45 | 5.35 | 6.10 | 4.65 | 5.40 | 4.55 | 5.30 | 4.30 | 5.05 | 3.70 | 4.45 |
| 1910 | 3.05 | 3.73 | 3.80 | 4.48 | 5.40 | 6.05 | 4.70 | 5.35 | 4.60 | 5.25 | 4.35 | 5.10 | 3.75 | 4.50 |
| 1911 | 2.67 | 5.21½ | 3.42 | 5.96 | 5.40 | 7.55 | 4.70 | 6.85 | 4.00 | 6.80 | 4.45 | 6.00 | 3.85 | 6.00 |
| 1912 | 2.98½ | 4.05 | 3.73 | 4.80 | 5.70 | 6.65 | 5.00 | 5.90 | 4.90 | 5.85 | 4.65 | 5.65 | 4.05 | 5.05 |
| 1913 | 2.37½ | 3.05 | 3.12 | 3.80 | 5.05 | 5.70 | 4.25 | 5.00 | 4.15 | 4.95 | 4.00 | 4.65 | 3.40 | 4.05 |
| 1914 | 2.27 | 5.87 | 2.92 | 6.52 | 5.05 | 8.40 | 3.95 | 7.60 | 3.85 | 7.55 | 3.60 | 7.30 | 3.00 | 6.70 |
| **1915.** | | | | | | | | | | | | | | |
| January | 3.20 | 3.46 | 3.95 | 4.20 | 5.85 | 5.95 | 5.05 | 5.15 | 5.95 | 5.10 | 4.70 | 4.80 | 4.10 | 4.20 |
| February | 3.45 | 4.27 | 4.20 | 5.02 | 5.95 | 6.65 | 5.15 | 5.85 | 5.05 | 5.80 | 4.80 | 5.50 | 4.20 | 4.90 |
| March | 3.81 | 4.18 | 4.58 | 4.95 | 6.65 | 6.80 | 5.85 | 6.00 | 5.75 | 5.95 | 5.50 | 5.65 | 4.90 | 5.05 |
| April | 3.84 | 4.12 | 4.61 | 4.89 | 6.80 | 6.90 | 6.00 | 6.10 | 5.90 | 6.05 | 5.65 | 5.75 | 5.05 | 5.15 |
| May | 3.87 | 4.12 | 4.64 | 4.89 | ...... | 6.90 | ...... | 6.10 | 6.00 | 6.05 | ...... | 5.75 | ...... | 5.15 |
| June | 4.12 | 4.18 | 4.89 | 4.95 | 6.90 | 7.00 | 6.10 | 6.20 | 6.00 | 6.15 | 5.75 | 5.85 | 5.15 | 5.25 |
| July | 3.87 | 4.27 | 4.64 | 4.95 | 6.70 | 7.00 | 5.90 | 6.20 | 5.80 | 6.15 | 5.55 | 5.85 | 4.95 | 5.25 |
| August | 3.62 | 4.18 | 4.39 | 4.95 | 6.50 | 6.70 | 5.70 | 5.90 | 5.60 | 5.85 | 5.35 | 5.55 | 4.75 | 4.95 |

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[1] Muscovado, 89° polarization, 1900 to 1908, inclusive.

## SUGAR—Continued.

TABLE 129.—*Sugar: Wholesale price per pound, on New York market, 1900–1915*—Contd.

| Date. | Raw. | | | | Refined. | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Molasses, 89° polarization. | | Centrifugal, 96° polarization. | | Cut loaf. | | Powdered. | | Granulated, fine or standard. | | Soft sugar No. 1. | | Soft sugar No. 15. | |
| | Low. | High. | Low. | High. | Low. | High. | Low. | High. | Low. | High. | Low. | High. | Low. | High. |
| | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* |
| September. | 2.98 | 4.00 | 3.75 | 4.77 | 5.80 | 6.50 | 5.00 | 5.70 | 4.90 | 5.65 | 4.65 | 5.35 | 4.05 | 4.75 |
| October.... | 2.73 | 3.68 | 3.50 | 4.45 | 5.80 | 6.15 | 5.00 | 5.35 | 4.90 | 5.30 | 4.65 | 5.00 | 4.05 | 4.40 |
| November. | 3.62 | 4.37 | 4.39 | 5.14 | 6.25 | 6.90 | 5.45 | 6.10 | 5.35 | 6.05 | 5.10 | 5.75 | 4.50 | 5.15 |
| December.. | 3.68 | 4.43 | 4.45 | 5.20 | 6.85 | 7.05 | 6.05 | 6.25 | 5.95 | 6.20 | 5.70 | 5.90 | 5.10 | 5.30 |
| Year..... | 2.73 | 4.43 | 3.50 | 5.20 | 5.80 | 7.05 | 5.00 | 6.25 | 4.90 | 6.20 | 4.65 | 5.90 | 4.05 | 5.30 |

TABLE 130.—*Sugar: International trade, calendar years 1912–1914.*

[The following kinds and grades have been included under the head of sugar: Brown, white, candied, caramel, *chancaca* (Peru), crystal cube, maple, muscovado, *panela*. The following have been excluded: "Candy" (meaning confectionery), confectionery, glucose, grape sugar, jaggery, molasses, and sirup. See "General note," p. 417.]

### EXPORTS.

[000 omitted.]

| Country. | 1912 | 1913 | 1914 (preliminary). | Country. | 1912 | 1913 | 1914 (preliminary). |
|---|---|---|---|---|---|---|---|
| | *Pounds.* | *Pounds.* | *Pounds.* | | *Pounds.* | *Pounds.* | *Pounds.* |
| Argentina.......... | 228 | 131 | 142,616 | Germany........... | 953,743 | 2,462,020 | .......... |
| Austria-Hungary... | 1,540,900 | 2,368,765 | .......... | Guadeloupe........ | 84,882 | [1] 84,882 | .......... |
| Barbados.......... | 57,902 | [1] 57,902 | .......... | Martinique......... | 86,991 | [1] 86,991 | .......... |
| Belgium........... | 348,081 | 251,935 | .......... | Mauritius.......... | 454,550 | [1] 454,550 | .......... |
| Brazil............. | 10,520 | 11,832 | 70,239 | Netherlands........ | 474,368 | 440,817 | .......... |
| British Guiana..... | 174,319 | [1] 174,319 | .......... | Peru.............. | 328,902 | 315,041 | 389,488 |
| British India....... | 80,454 | 53,181 | 43,207 | Philippine Islands. | 434,475 | 346,858 | 521,385 |
| China............. | 43,154 | 14,555 | 19,040 | Reunion........... | 58,812 | 58,812 | .......... |
| Cuba.............. | 4,357,051 | 5,476,901 | 5,574,683 | Russia............ | 830,036 | [1] 324,837 | 257,481 |
| Dominican Republic ............... | 195,714 | 173,832 | .......... | Trinidad and Tobago............ | 74,290 | [1] 74,290 | .......... |
| Dutch East Indies.. | 2,942,217 | 2,823,310 | .......... | United Kingdom... | 67,012 | 52,492 | 33,975 |
| Egypt............. | 20,769 | 11,316 | 29,398 | Other countries.... | 701,564 | 784,382 | .......... |
| Fiji............... | 138,271 | [1] 138,271 | .......... | | | | |
| France............ | 373,858 | 442,554 | .......... | Total......... | 14,833,063 | 17,484,776 | .......... |

### IMPORTS.

| Country. | 1912 | 1913 | 1914 (preliminary). | Country. | 1912 | 1913 | 1914 (preliminary). |
|---|---|---|---|---|---|---|---|
| Argentina.......... | 66,658 | 166,578 | 14,468 | Netherlands........ | 178,137 | 147,002 | .......... |
| Australia.......... | 220,597 | 167,690 | .......... | New Zealand....... | 135,902 | 137,790 | .......... |
| British India....... | 1,364,955 | 1,922,009 | 1,211,769 | Norway............ | 98,505 | 118,049 | 129,582 |
| British South Africa............ | 39,728 | 60,480 | 48,883 | Persia............. | 234,308 | 234,308 | .......... |
| Canada............ | 651,875 | 670,234 | 691,166 | Portugal.......... | 78,867 | 85,631 | .......... |
| Chile.............. | 149,486 | 197,073 | 185,425 | Singapore......... | 224,829 | 224,529 | .......... |
| China............. | 607,287 | 948,230 | 810,731 | Switzerland........ | 268,289 | 258,513 | .......... |
| Denmark.......... | 31,144 | 26,888 | .......... | Turkey [2]......... | 445,111 | 445,111 | .......... |
| Egypt............. | 77,277 | 72,609 | 27,964 | United Kingdom... | 3,693,670 | 3,872,309 | 3,761,740 |
| Finland........... | 103,818 | 105,106 | .......... | United States [3].... | 4,316,975 | 4,762,014 | 5,417,995 |
| France............ | 672,273 | 253,435 | .......... | Uruguay [4]......... | 57,087 | 57,087 | .......... |
| Italy.............. | 15,768 | 15,345 | 10,774 | Other countries.... | 734,672 | 792,360 | .......... |
| Japan............. | 303,093 | 725,067 | .......... | Total......... | 14,770,311 | 16,465,447 | .......... |

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[1] Year preceding.

[2] Data for year beginning March 14, 1910.

[3] Not including receipts from Hawaii, amounting in 1912, to 1,205,465,510; 1913, 1,085,362,344, and 1914, 1,210,862,124 pounds; and from Porto Rico, in 1912, 734,289,872; 1913, 765,420,310; and 1914, 641,754,932 pounds.

[4] Data for 1908.

## SUGAR—Continued.

**Table 191.**—*Sugar production of undermentioned countries, campaigns of 1912-13 to 1914-15.*

### BEET SUGAR (RAW).

| Country. | 1912-13 | 1913-14 | 1914-15 |
|---|---|---|---|
| NORTH AMERICA. | *Short tons.* | *Short tons.* | *Short tons.* |
| United States [1] | 692,556 | 733,401 | 722,054 |
| Canada | 12,439 | [1] 11,982 | [1] 13,773 |
| Total | 704,995 | 745,383 | 735,827 |
| EUROPE. | | | |
| Austria-Hungary: | | | |
| Austria | 1,442,159 | 1,287,787 | 1,288,960 |
| Hungary | 651,587 | 566,382 | 477,272 |
| Belgium | 326,653 | 251,023 | 224,437 |
| Denmark | 168,652 | 156,637 | 168,652 |
| France [1] | 967,440 | 790,790 | 333,953 |
| EUROPE—cont'd. | *Short tons.* | *Short tons.* | *Short tons.* |
| Germany | 2,993,085 | 2,993,704 | 2,755,759 |
| Italy | 218,628 | 335,413 | 183,753 |
| Netherlands | 315,775 | 231,073 | 263,852 |
| Roumania | 38,314 | 41,240 | 36,297 |
| Russia | 1,361,842 | 1,681,247 | .......... |
| Serbia | 13,338 | 7,165 | 2,205 |
| Spain | 171,839 | 186,680 | 110,946 |
| Sweden | 145,462 | 150,760 | 169,644 |
| Switzerland | .......... | 4,861 | 3,208 |
| Total | 8,804,774 | 8,684,762 | .......... |
| Grand total | 9,509,769 | 9,430,145 | .......... |

### CANE SUGAR.

| | | | |
|---|---|---|---|
| NORTH AMERICA. | | | |
| United States: | | | |
| Louisiana | 154,000 | 293,000 | 243,000 |
| Texas [2] | 9,000 | 8,000 | 4,000 |
| Hawaii | 547,000 | 612,000 | .......... |
| Porto Rico | 398,000 | 364,000 | .......... |
| Central America: | | | |
| Costa Rica | 3,000 | .......... | .......... |
| Guatemala | 8,000 | .......... | .......... |
| Nicaragua | 4,000 | .......... | .......... |
| Salvador | 18,000 | .......... | .......... |
| Mexico [2] | 164,000 | 143,000 | 121,000 |
| West Indies: | | | |
| British— | | | |
| Antigua | 14,000 | [3] 12,000 | .......... |
| Barbados | 32,000 | 11,000 | .......... |
| Jamaica | 20,000 | 15,000 | 17,000 |
| St. Christopher-Nevis | 12,000 | 13,000 | .......... |
| St. Lucia [3] | 5,000 | 5,000 | .......... |
| Trinidad and Tobago | 46,000 | 47,000 | 62,000 |
| Cuba | 2,737,000 | 2,909,000 | 2,980,000 |
| Danish [3] | 7,000 | 6,000 | 5,000 |
| Dominican Republic [3] | 111,000 | 117,000 | 119,000 |
| French— | | | |
| Guadeloupe [3] | 35,000 | 44,000 | 44,000 |
| Martinique [3] | 44,000 | 43,000 | 44,000 |
| Total | 4,368,000 | [4] 4,642,000 | .......... |
| SOUTH AMERICA. | | | |
| Argentina | 162,000 | 304,000 | 370,000 |
| Brazil | 343,000 | [2] 228,000 | [2] 269,000 |
| Guiana: | | | |
| British [3] | 87,000 | 98,000 | 120,000 |
| Dutch [3] | 11,000 | 15,000 | 13,000 |
| Peru | 203,000 | [3] 195,000 | [3] 193,000 |
| Total | 806,000 | 840,000 | 965,000 |
| EUROPE. | | | |
| Spain | 15,000 | 8,000 | 8,000 |
| ASIA. | | | |
| British India | 2,894,000 | 2,566,000 | 2,651,000 |
| Formosa | 79,000 | 213,000 | 222,000 |
| Japan | 68,000 | 73,000 | 60,000 |
| Java | 1,616,000 | 1,541,000 | .......... |
| Philippine Islands | 345,000 | 408,000 | .......... |
| Total | 5,002,000 | 4,801,000 | .......... |
| AFRICA. | | | |
| Egypt | 83,000 | 76,000 | 83,000 |
| Mauritius | 239,000 | 275,000 | 303,000 |
| Natal | 96,000 | 97,000 | 115,000 |
| Portuguese East Africa | 34,000 | 38,000 | 45,000 |
| Reunion | 43,000 | 41,000 | 44,000 |
| Total | 495,000 | 527,000 | 590,000 |
| OCEANIA. | | | |
| Australia | 145,000 | 297,000 | 269,000 |
| Fiji | 77,000 | 110,000 | 114,000 |
| Total | 222,000 | 407,000 | 383,000 |
| Total cane sugar | 10,908,000 | [4] 11,225,000 | .......... |
| Total beet and cane sugar | 20,518,000 | 20,655,000 | .......... |

[1] Refined sugar.
[2] Unofficial figures.
[3] Exports.
[4] Excluding Central America.

## SUGAR—Continued.

**TABLE 132.**—*Sugar: Total production of countries mentioned in Table 131, 1895–96 to 1913–14.*

| Year. | Production. | | | Year. | Production. | | |
|---|---|---|---|---|---|---|---|
| | Cane.[1] | Beet. | Total. | | Cane.[1] | Beet. | Total. |
| | *Short tons.* | *Short tons.* | *Short tons.* | | *Short tons.* | *Short tons.* | *Short tons.* |
| 1895–96 | 3.259,000 | 4,832,000 | 8,091,000 | 1905–6 | 7,551,000 | 8,090,000 | 15,641,000 |
| 1896–97 | 3,171,000 | 5,549,000 | 8,720.000 | 1906–7 | 8,365,000 | 7,587.000 | 15,952,000 |
| 1897–98 | 3,206,000 | 5,457.000 | 8.663,000 | 1907–8 | 7,926,000 | 7,390,000 | 15,316,000 |
| 1898–99 | 3,355,000 | 5,616,000 | 8,971,000 | 1908–9 | 8,654,000 | 7,350,000 | 16,004,000 |
| 1899–1900 | 3,389,000 | 6,262,000 | 9,651.000 | 1909–10 | 9,423.000 | 6,991.000 | 16,414,000 |
| 1900–1901 | 4,084,000 | 6 795,000 | 10.879.000 | 1910–11 | 9,540,000 | 9,042.000 | 18,582,000 |
| 1901–2 | 6,818.000 | 7,743,000 | 14,561,000 | 1911–12 | 10,275.000 | 7,072.000 | 17,347,000 |
| 1902–3 | 6,782.000 | 6,454.000 | 13,236.000 | 1912–13 | 10,908,000 | 9,509,769 | 20,518,000 |
| 1903–4 | 6,909.000 | 6,835.000 | 13,744.000 | 1913–14 | [2]11,225,000 | 9,430,145 | 20,655,000 |
| 1904–5 | 7,662,000 | 5,525,000 | 13,187,000 | | | | |

[1] Prior to 1901-2 these figures include exports instead of production for British India.
[2] Excluding Central America.

**TABLE 133.**—*Sugar beets: Area and production of undermentioned countries, 1912–1914.*

| Country. | Area. | | | Production. | | |
|---|---|---|---|---|---|---|
| | 1912 | 1913 | 1914 | 1912 | 1913 | 1914 |
| NORTH AMERICA. | *Acres.* | *Acres.* | *Acres.* | *Short tons.* | *Short tons.* | *Short tons.* |
| United States | 555,300 | 580,000 | 483,400 | 5,224,000 | 5,659,000 | 5,288,500 |
| Canada | 18,900 | 17,000 | 12,100 | 201,000 | 148,000 | 108,600 |
| Total | 574,200 | 597,000 | 446,500 | 5,425,000 | 5,807,000 | 5,397,100 |
| EUROPE. | | | | | | |
| Austria-Hungary: | | | | | | |
| Austria | 653,500 | 629,200 | [1] 599,600 | 8,734,000 | 7,674,000 | [1] 7,468,000 |
| Hungary | 425,700 | 438,500 | 439,200 | 5,286,000 | 5,264,000 | 4,425,000 |
| Croatia-Slavonia | 9,000 | 11,400 | ............ | 48,000 | 98,000 | ............ |
| Bosnia-Herzegovina | 2,800 | 2,800 | ............ | 11,800 | 12,800 | ............ |
| Belgium | 152,900 | 129,500 | 129,900 | 1,907,400 | 1,534,000 | ............ |
| Bulgaria | 8,200 | 8,600 | ............ | 67,500 | 93,700 | 331,000 |
| Denmark | 80,000 | 75,600 | 76,400 | 1,025,000 | 663,000 | 1,066,000 |
| England | 3,900 | 4,100 | 2,300 | ............ | ............ | ............ |
| France | 630,500 | 616,400 | [2] 330,800 | 7,961,000 | 6,547,000 | [2] 4,135,000 |
| Germany | 1,353,200 | 1,316,700 | 1,406,200 | 18,345,000 | 18.673,000 | 18,650,000 |
| Italy | 133,400 | 152,700 | 100,600 | 1,921,000 | 3,009,000 | 1,488,000 |
| Netherlands | 160,200 | 149,000 | 156,300 | 2,399,000 | 1,835,000 | 2,198,000 |
| Roumania | 35,500 | 32,200 | 36,500 | 322,000 | 311,000 | 248,000 |
| Russia | 1,847,300 | 1,756,100 | ............ | 11,821,000 | 13,615,000 | ............ |
| Serbia | 22,100 | ............ | ............ | 165,000 | ............ | ............ |
| Spain | 106,400 | 106,500 | 78,600 | 1,303,000 | 1,478,000 | 814,000 |
| Sweden | 66,900 | 70,900 | 79,700 | 933,000 | 932,000 | 967,000 |
| Switzerland | ............ | 2,000 | 2,000 | ............ | 34,900 | 29,800 |
| Total | 5,691,500 | 5,502,200 | ............ | 62,249,700 | 61,774,400 | ............ |
| Grand total | 6,265,700 | 6,099,200 | ............ | 67,674,700 | 67,581,400 | ............ |

[1] Excluding Galicia and Bukowina.
[2] Excluding invaded area.

## TEA.

### TABLE 134.—*Tea: International trade, calendar years 1912–1914.*

["Tea" includes tea leaves only and excludes dust, sweepings, and *yerba maté*. See "General note," p. 417.]

#### EXPORTS.

[000 omitted.]

| Country. | 1912 | 1913 | 1914 (prelim.). | Country. | 1912 | 1913 | 1914 (prelim.). |
|---|---|---|---|---|---|---|---|
| | *Pounds.* | *Pounds.* | *Pounds.* | | *Pounds.* | *Pounds.* | *Pounds.* |
| British India | 279,230 | 291,583 | 292,607 | Japan | 35,116 | 30,128 | .......... |
| Ceylon | 192,020 | [1] 192,020 | .......... | Singapore | 2,913 | [1] 2,913 | .......... |
| China | 196,488 | 192,122 | 199,440 | Other countries | 8,236 | 6,997 | .......... |
| Dutch East Indies | 66,610 | 58,527 | .......... | | | | |
| Formosa | 23,668 | 23,931 | 22,936 | Total | 804,281 | 798,221 | .......... |

#### IMPORTS.

| Country. | 1912 | 1913 | 1914 (prelim.). | Country. | 1912 | 1913 | 1914 (prelim.). |
|---|---|---|---|---|---|---|---|
| Argentina | 4,082 | 4,148 | 3,103 | Germany | 9,124 | 9,458 | .......... |
| Australia | 36,756 | 37,319 | .......... | Netherlands | 12,143 | 12,052 | .......... |
| Austria-Hungary | 3,793 | 3,575 | .......... | New Zealand | 7,684 | 7,069 | .......... |
| British India | 9,167 | 8,653 | 8,816 | Persia | 11,120 | [1] 11,120 | .......... |
| British South Africa | 6,115 | 6,567 | 6,374 | Russia | 151,037 | 167,140 | 159,992 |
| Canada | 42,658 | 35,927 | 39,035 | Singapore | 6,692 | [1] 6,692 | .......... |
| Chile | 3,812 | 3,819 | 2,787 | United Kingdom | 295,409 | 305,690 | 317,664 |
| China | 18,445 | 25,898 | 22,684 | United States | 98,706 | 89,018 | 97,810 |
| Dutch East Indies | 7,624 | 7,889 | .......... | Other countries | 38,486 | 36,685 | .......... |
| France | 2,886 | 2,660 | .......... | | | | |
| French Indo-China | 2,920 | 5,320 | .......... | Total | 768,659 | 786,759 | .......... |

[1] Year preceding.

### TABLE 135.—*Tea: Wholesale price per pound, on New York market, 1900–1915.*

| Date. | Foochow, fair to fine. | | Formosa, fine to choice. | | Japans, pan-fired. | | India orange pekoe. | | Ceylon orange pekoe. | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Low. | High. | Low. | High. | Low. | High. | Low. | High. | Low. | High. |
| | *Cents* | *Cents.* | *Cents.* | *Cents.* | *Cents.* | *Cents.* | *Cents.* | *Cents.* | *Cents.* | *Cents.* |
| 1900 | 22 | 28 | 27 | 45 | ....... | ....... | 27 | 30 | 27 | 37 |
| 1901 | 20 | 28 | 27 | 43 | ....... | ....... | 26 | 30 | 26 | 37 |
| 1902 | 21½ | 29 | 27½ | 47 | 18 | 33 | 26 | 35 | 26 | 36 |
| 1903 | 10 | 29 | 20½ | 50 | 8 | 33 | 19 | 35 | 19 | 36 |
| 1904 | 9 | 18 | 25 | 50 | 9½ | 14 | 18 | 25 | 18 | 27 |
| 1905 | 9 | 18 | 26 | 50 | 11 | 14 | 19 | 25 | 19 | 28 |
| 1906 | 8½ | 18 | 22 | 50 | 9½ | 16 | 19 | 25½ | 19 | 28 |
| 1907 | 9½ | 21 | 22 | 88 | 14½ | 35 | 15 | 25½ | 16 | 30 |
| 1908 | 12½ | 21 | 20 | 45 | 18 | 35 | 17 | 25 | 18 | 30 |
| 1909 | 12½ | 27 | 20 | 40 | 18 | 38 | 18 | 26 | 18 | 28 |
| 1910 | 10½ | 27 | 23 | 64½ | 17½ | 36 | 18 | 26¼ | 18 | 26 |
| 1911 | 10 | 22¾ | 23½ | 45½ | 17 | 32 | 18 | 26½ | 18 | 26 |
| 1912 | 11½ | 22¾ | 20 | 39 | 15 | 21 | 18 | 25 | 20 | 26 |
| 1913 | 12 | 22 | 24 | 39 | 13½ | 35 | 18½ | 24 | 18¼ | 24 |
| 1914 | 12 | 22 | 23 | 39 | 12½ | 38 | 18½ | 27 | 18½ | 26 |
| 1915. | | | | | | | | | | |
| January | 15 | 22 | 23 | 39 | 18 | 28 | ([1]) | ([1]) | 21 | 22 |
| February | 15 | 22 | 23 | 39 | 18 | 28 | ([1]) | ([1]) | 21 | 27 |
| March | 15½ | 22 | 23 | 39 | 18 | 33 | ([1]) | ([1]) | 25 | 30 |
| April | 15½ | 22 | 23 | 39 | 19 | 33 | ....... | ....... | 27 | 30 |
| May | 15½ | 22 | 23 | 39 | 19 | 35 | ....... | ....... | 27 | 30 |
| June | 16½ | 22 | 23 | 39 | 23 | 35 | ....... | ....... | 27 | 30 |
| July | 17 | 22 | 23 | 39 | 23 | 35 | 31 | 32 | 29 | 31 |
| August | 18 | 21 | 23 | 39 | 20 | 40 | 28 | 32 | 27 | 31 |
| September | 18 | 21 | 23 | 39 | 20 | 40 | 24 | 29 | 24 | 28 |
| October | 18 | 21 | 23 | 39 | 19 | 40 | 24 | 26 | 24 | 28 |
| November | 18 | 21 | 23 | 39 | 19 | 40 | 24 | 26 | 24 | 28 |
| December | 18 | 21 | 23 | 39 | 18 | 40 | 24 | 26 | 24 | 28 |
| Year | 15 | 22 | 23 | 39 | 18 | 40 | 24 | 32 | 21 | 31 |

[1] Nominal.

## COFFEE.

### TABLE 136.—*Coffee: International trade, calendar years 1912–1914.*

[The item of coffee comprises unhulled and hulled, roasted, ground, or otherwise prepared, but imitation or "surrogate" coffee and chicory are excluded. See "General note," p. 417.]

EXPORTS.

[000 omitted.]

| Country. | 1912 | 1913 | 1914 (prelim.). | Country. | 1912 | 1913 | 1914 (prelim.). |
|---|---|---|---|---|---|---|---|
| | *Pounds.* | *Pounds.* | *Pounds.* | | *Pounds.* | *Pounds.* | *Pounds.* |
| Belgium | 53,036 | 24,945 | .......... | Netherlands | 180,792 | 202,823 | .......... |
| Brazil | 1,597,950 | 1,754,973 | 1,490,715 | Nicaragua | 10,201 | 26,440 | 22,817 |
| British India | 34,937 | 22,073 | 39,973 | Salvador | 59,216 | 63,471 | 76,425 |
| Colombia | 123,442 | 134,993 | 136,500 | Singapore | 4,842 | 4,842 | .......... |
| Costa Rica | 26,980 | 28,702 | 39,059 | United States[2] | 49,716 | 52,905 | 48,179 |
| Dutch East Indies | 75,179 | 63,799 | .......... | Venezuela | 117,012 | 142,016 | 121,350 |
| Guatemala | 82,855 | 93,014 | .......... | Other countries | 66,047 | 61,603 | .......... |
| Haiti | 78,864 | 57,594 | .......... | | | | |
| Jamaica | 10,034 | [1] 10,034 | .......... | Total | 2,624,892 | 2,797,986 | .......... |
| Mexico | 53,759 | [1] 53,759 | .......... | | | | |

IMPORTS.

| Country. | 1912 | 1913 | 1914 (prelim.). | Country. | 1912 | 1913 | 1914 (prelim.). |
|---|---|---|---|---|---|---|---|
| Argentina | 31,063 | 32,602 | 30,925 | Norway | 25,907 | 30,193 | 25,665 |
| Austria-Hungary | 124,537 | 130,960 | .......... | Russia | 25,968 | 27,862 | 18,244 |
| Belgium | 110,434 | 118,195 | .......... | Singapore | 6,527 | [1] 6,527 | .......... |
| British South Africa | 26,004 | 26,910 | 25,820 | Spain | 29,500 | 33,365 | 30,280 |
| Cuba | 22,292 | 25,108 | 17,672 | Sweden | 67,667 | 75,484 | .......... |
| Denmark | 31,637 | 36,091 | .......... | Switzerland | 23,942 | 25,470 | .......... |
| Egypt | 15,774 | 13,975 | 13,116 | United Kingdom | 27,987 | 28,100 | 28,846 |
| Finland | 28,331 | 28,371 | .......... | United States | 942,515 | 852,529 | 1,011,072 |
| France | 245,243 | 254,157 | .......... | Other countries | 106,755 | 115,296 | .......... |
| Germany | 376,869 | 371,131 | .......... | | | | |
| Italy | 60,921 | 63,194 | 62,176 | Total | 2,586,161 | 2,615,092 | .......... |
| Netherlands | 256,288 | 319,572 | .......... | | | | |

[1] Year preceding.

[2] Chiefly from Porto Rico.

### TABLE 137.—*Coffee: Wholesale price per pound, on the New York and New Orleans markets, 1900–1915.*

| Date. | New York. | | | | | | | | | | | | New Orleans. | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Rio No. 7. | | Santos No. 7. | | Mocha. | | Padang. | | Cucuta, washed. | | Mexican Cordoba, washed.[1] | | Rio No. 7. | | Santos No. 7. | |
| | Low. | High. | Low. | High. | Low. | High. | Low. | High. | Low. | High. | Low. | High. | Low. | High. | Low. | High. |
| | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* |
| 1900 | 6¾ | 10 | 6¾ | 10 | 16 | 19¾ | 18 | 25½ | 9 | 13½ | 9 | 14 | 6⅞ | 10 | 7 | 10⅝ |
| 1901 | 5½ | 7¾ | 5½ | 7¾ | 15½ | 19½ | 15 | 19 | 7½ | 13 | 8 | 12½ | 5⅝ | 7⅞ | 5⅞ | 8 |
| 1902 | 5 | 7¼ | 5 | 7¼ | 13 | 19 | 17 | 19 | 8 | 13½ | 8¾ | 12¼ | 5⅝ | 7¼ | 5½ | 7⅝ |
| 1903 | 5 1/16 | 7⅛ | 5 1/16 | 7⅛ | 12 | 19 | 15½ | 17 | 8 | 13 | 8 | 13 | 5⅝ | 7⅝ | 5½ | 6⅝ |
| 1904 | 6½ | 9 1/16 | 6½ | 9 1/16 | 13 | 18 | 15½ | 16½ | 9 | 13¾ | 8¾ | 13½ | 7 | 9⅝ | ..... | ..... |
| 1905 | 7⅛ | 9⅛ | 7⅛ | 9⅛ | 16 | 18½ | 15 | 16 | 9 | 13 | 10¼ | 13 | 7½ | 9 | 7⅝ | 9 |
| 1906 | 6¾ | 9 | 6¾ | 9 | 15 | 21 | 13 | 15½ | 9¼ | 12 | 9¼ | 12¾ | 7⅜ | 8⅝ | 7½ | 8⅝ |
| 1907 | 6 | 7¼ | 6 | 7¼ | 15½ | 19 | 13 | 21 | 9⅝ | 13⅝ | 9⅝ | 13 | 6 | 7⅝ | 6⅝ | 7⅝ |
| 1908 | 6 | 7⅝ | 6 | 7⅝ | 14½ | 19 | 10 | 21 | 10 | 13½ | 10¼ | 13 | 5⅝ | 6⅝ | 7 | 7⅝ |
| 1909 | 6½ | 8⅝ | 6½ | 8⅝ | 14 | 17 | 10 | 20½ | 9⅝ | 14 | 10¼ | 13¼ | 7⅝ | 8⅝ | 7½ | 8⅝ |
| 1910 | 8 | 13⅛ | 8½ | 13⅝ | 14¼ | 17½ | 17 | 20 | 10 | 16½ | 10¼ | 15⅝ | 8¼ | 13¼ | 8⅝ | 13⅝ |
| 1911 | 11⅞ | 16⅝ | 12⅛ | 16⅝ | 15⅝ | 20 | 18½ | 22 | 13⅞ | 18 | 14⅝ | 18¾ | 11⅞ | 16⅝ | 12⅝ | 16⅝ |
| 1912 | 13⅞ | 15¼ | 14¼ | 16¼ | 18⅝ | 21 | 19½ | 22 | 15¼ | 18½ | 15¾ | 18½ | 13⅞ | 15¼ | 14⅝ | 16⅝ |
| 1913 | 8⅜ | 14 | 10⅜ | 15⅝ | 18 | 21 | 19 | 23 | 11¾ | 17¾ | 15 | 18 | 9 | 14 | 10⅝ | 15 |
| 1914 | 6¼ | 9⅞ | 8¼ | 12⅞ | 17½ | 30 | 21 | 24 | 11 | 18¼ | 12 | 17¼ | 6⅝ | 10⅞ | 8⅝ | 13⅝ |
| **1915.** | | | | | | | | | | | | | | | | |
| January | 7¼ | 8¼ | 8½ | 9 | 21½ | 30 | 21 | 23½ | 12¼ | 15⅝ | 12 | 14½ | 7½ | 8⅝ | 9 | 9½ |
| February | 7⅜ | 8¼ | 8⅝ | 9 | 23 | 30 | 21 | 23 | 12⅞ | 15⅝ | 12 | 14½ | 7⅝ | 8⅝ | 8⅞ | 9⅝ |
| March | 7⅝ | 8 | 8⅝ | 9¼ | 23 | 30 | 21 | 23 | 12¾ | 15⅝ | 12 | 14 | 7⅝ | 8⅝ | 8⅞ | 9⅝ |
| April | 7¼ | 8⅜ | 9 | 9¼ | 23 | 30 | 21 | 23 | 13 | 15¼ | 12 | 14 | 7¾ | 8⅝ | 9⅝ | 9⅝ |
| May | 7⅝ | 7⅞ | 8⅜ | 9¼ | 23 | 30 | 21 | 23 | 11½ | 15½ | 11½ | 14 | 7 | 7⅝ | 8⅝ | 9⅝ |
| June | 7 | 7⅝ | 8½ | 9 | 23 | 30 | 21 | 22 | 11¼ | 14⅝ | 11 | 13½ | 7½ | 7⅝ | 8⅝ | 9 |
| July | 7⅝ | 7⅝ | 8⅜ | 9 | 23 | 30 | 21 | 22 | 11¼ | 14½ | 11 | 13 | 7⅝ | 7⅝ | 8⅝ | 9 |
| August | 7 | 7⅝ | 8⅝ | 9 | 25 | 27 | 21 | 22 | 11 | 14⅝ | 11 | 13 | 7 | 7⅝ | 7⅞ | 8⅝ |
| September | 6⅝ | 7 | 7⅞ | 8½ | 25 | 27 | 21 | 22 | 11 | 14 | 10½ | 13 | 6⅞ | 7¾ | 7⅞ | 8⅝ |
| October | 6⅞ | 7⅛ | 7⅞ | 8 | 25 | 27 | 21 | 23 | 11 | 15 | 10½ | 13 | 7 | 7¾ | 7⅞ | 8⅝ |
| November | 7⅛ | 7⅜ | 7⅞ | 8½ | 25 | 27 | 22½ | 23 | 11½ | 15¼ | 11½ | 13½ | 7½ | 8 | 8⅝ | 8⅝ |
| December | 7⅜ | 7⅝ | 7⅞ | 8⅝ | 25 | 27 | 22½ | 23 | 11⅞ | 15⅞ | 11 | 13½ | 7⅝ | 7⅞ | 8⅝ | 8⅝ |
| Year | 6⅝ | 8⅛ | 7⅞ | 9¼ | 21½ | 30 | 21 | 23½ | 11 | 15⅝ | 10½ | 14½ | 6⅞ | 8⅝ | 7⅞ | 9⅝ |

[1] Prices nominal because of small arrivals (January to September, inclusive).

## OIL CAKE AND OIL-CAKE MEAL.

### TABLE 138.—*Oil cake and oil-cake meal: International trade, calendar years 1912–1914.*

[The class called here "oil cake and oil-cake meal" includes the edible cake and meal remaining after making oil from such products as cotton seed, flaxseed, peanuts, corn, etc. See "General note," p. 417.]

EXPORTS.

[000 omitted.]

| Country. | 1912 | 1913 | 1914 (prelim.). | Country. | 1912 | 1913 | 1914 (prelim.). |
|---|---|---|---|---|---|---|---|
| | *Pounds.* | *Pounds.* | *Pounds.* | | *Pounds.* | *Pounds.* | *Pounds.* |
| Argentina | 38,849 | 46,191 | 38,367 | Italy | 57,795 | 43,401 | 120,607 |
| Austria-Hungary | 127,661 | 111,252 | .......... | Mexico | 40,138 | [1] 40,138 | .......... |
| Belgium | 157,458 | 125,241 | .......... | Netherlands | 253,003 | 228,492 | .......... |
| British India | 333,504 | 400,818 | 334,141 | Russia | 1,552,042 | 1,620,106 | 935,683 |
| Canada | 69,353 | 65,530 | 35,567 | United Kingdom | 69,512 | 52,741 | 73,295 |
| China | 112,629 | 175,073 | 190,672 | United States | 1,980,166 | 1,952,184 | 1,579,171 |
| Denmark | 21,742 | 21,061 | .......... | Other countries | 80,677 | 97,345 | .......... |
| Egypt | 178,083 | 138,839 | 176,339 | | | | |
| France | 471,101 | 473,550 | .......... | Total | 6,124,895 | 6,240,498 | .......... |
| Germany | 581,182 | 648,536 | .......... | | | | |

IMPORTS.

| Country. | 1912 | 1913 | 1914 (prelim.). | Country. | 1912 | 1913 | 1914 (prelim.). |
|---|---|---|---|---|---|---|---|
| Austria-Hungary | 74,091 | 79,860 | .......... | Japan | 190,495 | 284,310 | .......... |
| Belgium | 534,293 | 567,391 | .......... | Netherlands | 822,757 | 766,498 | .......... |
| Canada | 10,594 | 11,090 | 15,625 | Norway | 65,400 | 66,407 | 83,044 |
| Denmark | 1,114,414 | 1,250,972 | .......... | Sweden | 385,474 | 351,106 | .......... |
| Dutch East Indies | 38 | 465 | .......... | Switzerland | 75,158 | 54,955 | .......... |
| Finland | 32,071 | 25,533 | .......... | United Kingdom | 863,621 | 904,606 | 731,264 |
| France | 341,642 | 223,928 | .......... | Other countries | 20,616 | 21,776 | .......... |
| Germany | 1,750,872 | 1,826,618 | .......... | | | | |
| Italy | 8,627 | 6,520 | 2,471 | Total | 6,290,163 | 6,442,035 | .......... |

[1] Year preceding.

## ROSIN.

### TABLE 139.—*Rosin: International trade, calendar years 1912–1914.*

[For rosin, only the resinous substance known as "rosin" in the exports of the United States, is taken. See "General note," p. 417.]

EXPORTS.

[000 omitted.]

| Country. | 1912 | 1913 | 1914 (prelim.). | Country. | 1912 | 1913 | 1914 (prelim.). |
|---|---|---|---|---|---|---|---|
| | *Pounds.* | *Pounds.* | *Pounds.* | | *Pounds.* | *Pounds.* | *Pounds.* |
| Austria-Hungary | 2,388 | 2,327 | .......... | Russia | 49,507 | 55,922 | 41,494 |
| Belgium | 60,312 | 57,491 | .......... | Spain | 25,068 | 18,328 | 19,148 |
| France | 145,144 | 90,159 | .......... | United States | 680,777 | 729,419 | 489,580 |
| Germany | 37,609 | 56,884 | .......... | Other countries | 2,302 | 3,394 | .......... |
| Greece | 14,061 | 3,982 | .......... | | | | |
| Netherlands | 61,698 | 59,713 | .......... | Total | 1,078,866 | 1,077,619 | .......... |

IMPORTS.

| Country. | 1912 | 1913 | 1914 (prelim.). | Country. | 1912 | 1913 | 1914 (prelim.). |
|---|---|---|---|---|---|---|---|
| Argentina | 32,005 | 43,906 | 35,463 | Italy | 37,569 | 39,918 | 32,978 |
| Australia | 13,067 | 16,924 | .......... | Japan | 11,591 | 15,649 | .......... |
| Austria-Hungary | 82,270 | 74,208 | .......... | Netherlands | 83,794 | 79,452 | .......... |
| Belgium | 73,957 | 82,426 | .......... | Norway | 6,281 | 8,104 | 5,709 |
| Brazil | 41,033 | 41,730 | 29,340 | Roumania | 5,344 | [1] 5,344 | .......... |
| British India | 7,358 | 5,705 | 3,535 | Russia | 68,047 | 81,373 | 62,728 |
| Canada | 26,381 | 28,462 | 22,883 | Serbia[2] | 586 | 586 | .......... |
| Chile | 7,129 | 7,832 | 4,515 | Spain | 739 | 683 | 645 |
| Cuba | 6,240 | 4,771 | 4,239 | Switzerland | 5,383 | 5,209 | .......... |
| Denmark | 3,329 | 3,513 | .......... | United Kingdom | 176,344 | 187,934 | 154,655 |
| Dutch East Indies | 23,474 | 17,287 | .......... | Uruguay[3] | 5,837 | 5,837 | .......... |
| Finland | 5,126 | 7,594 | .......... | Other countries | 16,987 | 17,928 | .......... |
| France | 3,186 | 1,966 | .......... | | | | |
| Germany | 250,181 | 212,226 | .......... | Total | 993,238 | 996,567 | .......... |

[1] Year preceding.

[2] Data for 1911.

[3] Data for 1908.

## TURPENTINE.

### TABLE 140.—*Turpentine (spirits): International trade, calendar years 1912–1914.*

["Spirits of turpentine" includes only "spirits" or "oil" of turpentine and, for Russia, *skipidar;* it excludes crude turpentine, pitch, and, for Russia, *terpentin.* See "General note," p. 417.]

EXPORTS.

[000 omitted.]

| Country. | 1912 | 1913 | 1914 (prelim.). | Country. | 1912 | 1913 | 1914 (prelim.). |
|---|---|---|---|---|---|---|---|
| | *Gallons.* | *Gallons.* | *Gallons.* | | *Gallons.* | *Gallons.* | *Gallons.* |
| Belgium | 1,871 | 1,693 | .......... | Spain | 1,005 | 1,329 | 1,052 |
| France | 2,071 | 2,990 | .......... | United States | 20,811 | 20,018 | 11,118 |
| Germany | 494 | 578 | .......... | Other countries | 750 | 741 | .......... |
| Netherlands | 3,471 | 4,112 | .......... | | | | |
| Russia | 2,336 | 2,269 | 1,439 | Total | 32,809 | 33,730 | .......... |
| | | | IMPORTS | | | | |
| Argentina | 607 | 698 | 488 | New Zealand | 216 | 200 | .......... |
| Australia | 681 | 524 | .......... | Russia | 288 | 363 | 242 |
| Austria-Hungary | 2,775 | 2,668 | .......... | Sweden | 132 | 158 | .......... |
| Belgium | 3,054 | 2,994 | .......... | Switzerland | 466 | 592 | .......... |
| Canada | 1,315 | 1,253 | 1,152 | United Kingdom | 9,837 | 8,356 | 5,031 |
| Chile | 226 | 180 | 140 | Other countries | 1,185 | 1,161 | .......... |
| Germany | 9,325 | 10,726 | .......... | | | | |
| Italy | 993 | 1,061 | 874 | Total | 36,070 | 36,998 | .......... |
| Netherlands | 4,970 | 6,064 | .......... | | | | |

## INDIA RUBBER.

### TABLE 141.—*India rubber: International trade, calendar years 1912–1914.*

[Figures for india rubber include "india rubber," so called, and *caoutchouc, caucho, jebe* (Peru), *hule* (Mexico), *borracha, massaranduba, mangabeira, maniçoba, sorva* and *seringa* (Brazil), *gomelastiek* (Dutch East Indies), *caura, sernambi* (Venezuela). See "General note," p. 417.]

EXPORTS.

[000 omitted.]

| Country. | 1912 | 1913 | 1914 (prelim.). | Country. | 1912 | 1913 | 1914 (prelim.). |
|---|---|---|---|---|---|---|---|
| | *Pounds.* | *Pounds.* | *Pounds.* | | *Pounds.* | *Pounds.* | *Pounds.* |
| Angola | 6,034 | 4,458 | .......... | Ivory Coast | 3,034 | [1]3,034 | .......... |
| Belgian Kongo | 7,737 | [1]7,737 | .......... | Kamerun | 6,197 | 2,608 | .......... |
| Belgium | 24,608 | 24,456 | .......... | Mexico | 12,197 | [1]12,197 | .......... |
| Bolivia | 8,994 | 11,339 | 9,887 | Netherlands | 8,686 | 12,368 | .......... |
| Brazil | 93,224 | 79,876 | 73,924 | Peru | 7,039 | 6,131 | 5,009 |
| Dutch East Indies | 5,945 | 15,910 | .......... | Senegal | 457 | [1]457 | .......... |
| Ecuador | [2]1,210 | 428 | .......... | Singapore | 8,472 | [1]8,472 | .......... |
| France | 24,588 | 20,733 | .......... | Southern Nigeria | 1,579 | [1]1,579 | .......... |
| French Guinea | 4,499 | [1]4,499 | .......... | Venezuela | 990 | 527 | 252 |
| French Kongo | 4,191 | [1]4,191 | .......... | Other countries | 68,749 | 71,276 | .......... |
| Germany | 10,898 | 8,756 | .......... | | | | |
| Gold Coast | 1,991 | [1]1,991 | .......... | Total | 311,319 | 303,023 | .......... |
| | | | IMPORTS. | | | | |
| Austria-Hungary | 7,841 | 7,975 | .......... | Russia | 20,600 | 28,135 | 25,036 |
| Belgium | 30,138 | 32,492 | .......... | United Kingdom | 41,942 | 56,617 | 41,596 |
| Canada | 5,498 | 4,802 | 5,108 | United States | 118,058 | 115,881 | 143,065 |
| France | 37,080 | 33,836 | .......... | Other countries | 16,207 | 17,240 | .......... |
| Germany | 45,385 | 45,188 | .......... | | | | |
| Italy | 7,704 | 6,271 | 6,733 | Total | 342,309 | 366,160 | .......... |
| Netherlands | 11,856 | 17,728 | .......... | | | | |

[1] Year preceding.

[2] Data for 1911.

## SILK.

TABLE 142.—*Production of raw silk in undermentioned countries, 1910–1914.*

[Estimates of the Silk Merchants' Union of Lyons, France.]

| Country. | 1910 | 1911 | 1912 | 1913 | 1914 (preliminary). |
|---|---|---|---|---|---|
| | *Pounds.* | *Pounds.* | *Pounds.* | *Pounds.* | *Pounds.* |
| Western Europe: | | | | | |
| Italy | 8,702,000 | 7,694,000 | 9,050,000 | 7,804,000 | 8,995,000 |
| France | 701,000 | 886,000 | 1,113,000 | 772,000 | 893,000 |
| Spain | 183,000 | 194,000 | 172,000 | 181,000 | 154,000 |
| Austria | 776,000 | 772,000 | 410,000 | 331,000 | 386,000 |
| Hungary | | | 238,000 | 271,000 | 286,000 |
| Total | 10,362,000 | 9,546,000 | 10,983,000 | 9,359,000 | 10,714,000 |
| Levant and Central Asia: | | | | | |
| Broussa and Anatolia | 1,058,000 | 1,290,000 | 844,000 | 1,025,000 | 794,000 |
| Syria and Cyprus | 1,190,000 | 1,157,000 | 882,000 | 1,080,000 | 926,000 |
| Other Provinces of Asiatic Turkey | 287,000 | 353,000 | 254,000 | 298,000 | 242,000 |
| Turkey in Europe[1] | ........... | ........... | 573,000 | 187,000 | 132,000 |
| Saloniki and Adrianople | 794,000 | 827,000 | ........... | ........... | ........... |
| Balkan States (Bulgaria, Servia, and Roumania) | 386,000 | 375,000 | 320,000 | 298,000 | 231,000 |
| Greece, Saloniki, and Crete | 126,000 | 137,000 | 110,000 | 408,000 | 331,000 |
| Caucasus | 1,146,000 | 1,058,000 | 871,000 | 849,000 | 772,000 |
| Persia (exports) | 1,186,000 | 1,329,000 | 500,000 | 463,000 | ........... |
| Turkestan (exports)[2] | | | 569,000 | 496,000 | ........... |
| Total | 6,173,000 | 6,526,000 | 4,923,000 | 5,104,000 | 3,428,000 |
| Far East: | | | | | |
| China— | | | | | |
| Exports from Shanghai | 11,448,000 | 13,095,000 | 14,198,000 | 12,709,000 | 8,201,000 |
| Exports from Canton | 5,814,000 | 3,814,000 | 4,982,000 | 6,063,000 | 4,288,000 |
| Japan— | | | | | |
| Exports from Yokohama | 19,698,000 | 20,657,000 | 23,957,000 | 26,720,000 | 21,495,000 |
| British India— | | | | | |
| Exports from Bengal and Cashmere | 507,000 | 494,000 | 260,000 | 249,000 | 66,000 |
| Indo-China— | | | | | |
| Exports from Saigon, Haiphong, etc | ........... | 35,000 | 33,000 | 26,000 | 22,000 |
| Total | 37,467,000 | 38,095,000 | 43,430,000 | 45,767,000 | 34,072,000 |
| Grand total | 54,002,000 | 54,167,000 | 59,336,000 | 60,230,000 | 48,214,000 |

[1] Prior to 1913 Turkey in Europe included the Vilayet of Saloniki, which now belongs to Greece.
[2] Including "Central Asia in 1912 and 1913."

TABLE 143.—*Total production of raw silk in countries mentioned in Table 142, 1900–1914.*

| Year. | Production. | Year. | Production. | Year. | Production. |
|---|---|---|---|---|---|
| | *Pounds.* | | *Pounds.* | | *Pounds.* |
| 1900 | 40,724,000 | 1905 | 41,513,000 | 1910 | 54,002,000 |
| 1901 | 42,393,000 | 1906 | 46,106,000 | 1911 | 54,167,000 |
| 1902 | 41,368,000 | 1907 | 48,634,000 | 1912 | 59,336,000 |
| 1903 | 39,981,000 | 1908 | 53,087,000 | 1913 | 60,230,000 |
| 1904 | 45,195,000 | 1909 | 54,035,000 | 1914 (preliminary) | 48,214,000 |

## WOOD PULP.

### TABLE 144.—*Wood pulp: International trade, calendar years 1912–1914.*

[All kinds of pulp from wood have been taken for this item, but no pulp made from other fibrous substances. See "General note," p. 417.]

EXPORTS.

[000 omitted.]

| Country. | 1912 | 1913 | 1914 (prelim.). | Country. | 1912 | 1913 | 1914 (prelim.). |
|---|---|---|---|---|---|---|---|
| | *Pounds.* | *Pounds.* | *Pounds.* | | *Pounds.* | *Pounds.* | *Pounds.* |
| Austria-Hungary | 214,074 | 225,489 | .......... | Sweden | 2,091,135 | 2,225,232 | .......... |
| Belgium | 91,291 | 74,351 | .......... | Switzerland | 13,109 | 14,659 | .......... |
| Canada | 696,203 | 596,339 | 849,766 | United States | 28,379 | 39,552 | 24,674 |
| Finland | 304,751 | 278,907 | .......... | Other countries | 116,998 | 136,540 | .......... |
| Germany | 402,769 | 412,195 | .......... | | | | |
| Norway | 1,529,091 | 1,558,473 | 1,390,451 | Total | 5,535,900 | 5,591,098 | .......... |
| Russia | 48,100 | 29,361 | 6,500 | | | | |

IMPORTS.

| Country. | 1912 | 1913 | 1914 (prelim.). | Country. | 1912 | 1913 | 1914 (prelim.). |
|---|---|---|---|---|---|---|---|
| Argentina | 43,970 | 70,531 | 51,441 | Russia | 59,165 | 58,770 | 62,800 |
| Austria-Hungary | 17,665 | 13,377 | .......... | Spain | 100,609 | 134,352 | 87,233 |
| Belgium | 322,398 | 291,900 | .......... | Sweden | 10,518 | 10,601 | .......... |
| Denmark | 118,266 | 130,654 | .......... | Switzerland | 23,967 | 26,602 | .......... |
| France | 927,456 | 1,025,025 | .......... | United Kingdom | 2,031,266 | 2,153,077 | 2,201,302 |
| Germany | 125,683 | 121,124 | .......... | United States | 1,079,580 | 1,082,914 | 1,351,130 |
| Italy | 204,554 | 212,241 | 193,943 | Other countries | 62,449 | 197,245 | .......... |
| Japan | 101,730 | 105,509 | .......... | | | | |
| Portugal | 19,796 | 21,192 | .......... | Total | 5,249,162 | 5,655,114 | .......... |

## FARM ANIMALS AND THEIR PRODUCTS.

### TABLE 145.—*Livestock in principal and other countries.*

[Official estimates or census figures for latest data available with comparisons for earlier years. Date referring to census figures are in italics; dates referring to other figures are in Roman type.]

PRINCIPAL COUNTRIES.

| Country. | Date | Cattle. | Buffaloes. | Swine. | Sheep. | Goats. | Horses | Mules. | Asses. |
|---|---|---|---|---|---|---|---|---|---|
| | | *Thousand.* | *Thousand.* | *Thousand.* | *Thousand.* | *Thousand.* | *Thousand.* | *Thousand.* | *Thousand.* |
| United States: | | | | | | | | | |
| On farms | Jan. 1, 1916 | 61,441 | (1) | 68,047 | 49,162 | (1) | 21,166 | 4,565 | (1) |
| | Jan. 1, 1915 | 58,329 | ........ | 64,618 | 49,956 | (1) | 21,195 | 4,479 | (1) |
| | *Apr. 15, 1910* | 61,804 | (1) | 58,186 | 52,448 | 2,915 | 19,833 | 4,210 | 106 |
| Not on farms | *Apr. 15, 1910* | 1,879 | ........ | 1,288 | 391 | 115 | 3,183 | 270 | 17 |
| Alaska | *Jan. 1, 1910* | 1 | [2] 22 | (3) | (3) | (3) | 2 | (3) | (3) |
| Hawaii | *Apr. 15, 1910* | 149 | ........ | 31 | 77 | 5 | 28 | 9 | 3 |
| Porto Rico | *Apr. 15, 1910* | 316 | ........ | 106 | 6 | 49 | 58 | 5 | 1 |
| Total | 1910 | 64,149 | [2] 22 | 59,611 | 52,922 | 3,084 | 22,104 | 4,494 | 127 |
| Algeria | Dec. 31, 1912 | 1,107 | (4) | 114 | 8,338 | 3,772 | 221 | 192 | 271 |
| | Sept., 1910 | 1,128 | (4) | 109 | 9,042 | 3,990 | 230 | 192 | 276 |
| | Sept., 1905 | 1,067 | (4) | 91 | 9,063 | 4,030 | 221 | 174 | 278 |
| | Sept., 1900 | 993 | (4) | 82 | 6,724 | 3,563 | 202 | 147 | 263 |
| | Sept., 1895 | 1,121 | (4) | 84 | 7,892 | 3,545 | 217 | 142 | 287 |
| Argentina | Dec. 31, 1912 | 29,123 | ........ | 3,045 | 83,546 | 4,431 | 9,239 | 556 | 329 |
| | *May 1, 1908* | 29,124 | ........ | 1,404 | 67,384 | 3,947 | 7,538 | 465 | 285 |
| | *May, 1895* | 21,702 | ........ | 653 | 74,380 | 2,749 | 4,447 | 285 | 198 |
| | *1888* | 21,962 | ........ | 394 | 66,706 | 1,894 | 4,234 | 417 | |
| Australia | Dec. 31, 1914 | 11,131 | (4) | [5] 301 | 82,033 | ........ | 2,500 | ........ | ........ |
| | Dec. 31, 1910 | 11,745 | (4) | 1,026 | 92,047 | 314 | 2,166 | 5 | |
| | Dec. 31, 1905 | 8,528 | (4) | 1,015 | 74,541 | ........ | 1,675 | ........ | ........ |
| | Dec. 31, 1900 | 8,640 | (4) | 950 | 70,603 | ........ | 1,610 | ........ | ........ |
| | Dec. 31, 1895 | 11,767 | (4) | 823 | 90,690 | ........ | 1,690 | ........ | ........ |
| | 1890 | 10,300 | (4) | 891 | 97,881 | ........ | 1,522 | ........ | ........ |

[1] Estimated only for census years.

[2] Reindeer.

[3] Less than 500.

[4] No official statistics.

TABLE 145.—*Livestock in principal and other countries*—Continued.

PRINCIPAL COUNTRIES—Continued.

| Country. | Date. | Cattle. | Buffaloes. | Swine. | Sheep. | Goats. | Horses. | Mules. | Asses. |
|---|---|---|---|---|---|---|---|---|---|
| | | *Thousand.* | *Thousand.* | *Thousand.* | *Thousand.* | *Thousand.* | *Thousand.* | *Thousand.* | *Thousand.* |
| **Austria-Hungary:** | | | | | | | | | |
| **Austria** | *Dec. 31, 1910* | 9,160 | 1 | 6,432 | 2,428 | 1,257 | 1,803 | 21 | 53 |
| | *Dec. 31, 1900* | 9,511 | (1) | 4,683 | 2,621 | 1,020 | 1,716 | 20 | 46 |
| | *Dec. 31, 1890* | 8,644 | (1) | 3,550 | 3,187 | 1,036 | 1,548 | 17 | 41 |
| | *Dec. 31, 1880* | 8,584 | (1) | 2,722 | 3,841 | 1,007 | 1,463 | 50 | |
| **Hungary** | Apr., 1913 | 6,045 | 162 | 6,825 | 6,560 | 269 | 2,005 | 1 | 16 |
| | Feb. 28, *1911* | 6,184 | | 6,416 | 7,698 | 331 | 2,001 | 1 | 18 |
| | Nov. 20, *1895* | 5,830 | | 6,447 | 7,527 | 237 | 1,997 | 22 | |
| | *1884* | 4,879 | | 4,804 | 10,595 | 270 | 1,749 | 23 | |
| **Croatia-Slavonia** | *Mar. 24, 1911* | 1,135 | ..... | 1,164 | 850 | 96 | 350 | 3 | |
| | *Dec. 31, 1895* | 909 | ........ | 883 | 596 | 22 | 311 | 1 | 2 |
| **Bosnia-Herzegovina** | *Oct. 10–Nov. 10, 1910* | 1,309 | 1 | 527 | 2,499 | 1,393 | 222 | (2) | 6 |
| | *Apr. 22–May 22, 1895* | 1,416 | 1 | 662 | 3,231 | 1,447 | 231 | 1 | 5 |
| **Belgium** | Dec. 31, 1913 | 1,849 | ........ | 1,412 | (1) | (1) | 267 | (1) | (1) |
| | *Dec. 31, 1910* | 1,880 | ........ | 1,494 | 185 | 218 | 317 | 11 | |
| | *Dec. 21, 1895* | 1,121 | ........ | 1,163 | 236 | 241 | 272 | 7 | |
| | *Dec. 31, 1880* | 1,383 | ........ | 646 | 365 | (1) | 272 | (1) | (1) |
| **Brazil** | *1912–13* | 30,705 | ........ | 18,399 | 10,653 | 10,049 | 7,289 | 3,208 | |
| **Bulgaria** | *Dec. 31, 1910* | 1,603 | 415 | 527 | 8,632 | 1,459 | 478 | 12 | 118 |
| | *Dec. 31, 1905* | 1,696 | 477 | 465 | 8,131 | 1,384 | 538 | 12 | 124 |
| | *Dec. 31, 1900* | 1,596 | 431 | 368 | 7,015 | 1,405 | 495 | 9 | 107 |
| | *Dec. 31, 1892* | 1,426 | 342 | 462 | 6,868 | 1,264 | 344 | 8 | 82 |
| **Canada** | June 30, 1915 | 6,066 | ........ | 3,112 | 2,039 | (1) | 2,996 | (1) | (1) |
| | *June 1, 1911* | 6,533 | ........ | 3,610 | 2,175 | (1) | 2,596 | (1) | (1) |
| | *June 1, 1901* | 5,576 | ........ | 2,354 | 2,510 | (1) | 1,577 | (1) | (1) |
| | 1891 | 4,121 | ........ | 1,734 | 2,564 | (1) | 1,471 | (1) | (1) |
| | 1881 | 3,515 | ........ | 1,208 | 3,049 | (1) | 1,059 | (1) | (1) |
| **Denmark** | May 15, 1915 | 2,417 | (1) | 1,919 | 533 | (1) | 526 | (1) | (1) |
| | *July 15, 1914* | 2,463 | ........ | 2,497 | 515 | 41 | 568 | (1) | (1) |
| | *July 15, 1909* | 2,254 | ........ | 1,468 | 727 | 40 | 535 | (1) | (1) |
| | *July 15, 1903* | 1,840 | ........ | 1,457 | 877 | 39 | 487 | (1) | (1) |
| | *July 15, 1898* | 1,745 | ........ | 1,168 | 1,074 | 32 | 419 | (1) | (1) |
| **Finland** | 1910 | 1,573 | [3] 120 | 418 | 1,309 | 13 | 361 | (1) | (1) |
| | 1905 | 1,481 | [3] 142 | 220 | 938 | 6 | 324 | (1) | (1) |
| | 1900 | 1,428 | [3] 119 | 211 | 985 | 8 | 311 | (1) | (1) |
| | 1890 | 1,305 | [3] 86 | 194 | 1,054 | 15 | 293 | (1) | (1) |
| **France** | July 1, 1915 | 12,287 | ........ | 5,491 | 13,483 | 469 | 2,227 | 152 | 337 |
| | Dec. 31, 1913 | 14,807 | ........ | 7,048 | 16,213 | 1,453 | 3,231 | 193 | 360 |
| | Dec. 31, 1910 | 14,533 | ........ | 6,900 | 17,111 | 1,418 | 3,198 | 193 | 361 |
| | Dec. 31, 1905 | 14,316 | ........ | 7,559 | 17,783 | 1,477 | 3,169 | 199 | 365 |
| | Dec. 31, 1900 | 14,521 | ........ | 6,740 | 20,180 | 1,558 | 2,903 | 205 | 356 |
| | *Nov. 30, 1892* | 13,709 | ........ | 7,421 | 21,116 | 1,845 | 2,795 | 217 | 369 |
| | *1882* | 12,997 | ........ | 7,147 | 23,809 | 1,851 | 2,838 | 251 | 396 |
| | *1862* | 12,812 | ........ | 6,038 | 29,530 | 1,726 | 2,914 | (1) | (1) |
| **Germany** | *Dec. 1, 1914* | 21,817 | (1) | 25,339 | 5,452 | 3,534 | [4] 3,441 | (1) | (1) |
| | *Dec. 2, 1912* | 20,182 | (1) | 21,924 | 5,803 | 3,410 | 4,523 | 13 | |
| | *Dec. 2, 1907* | 20,631 | (1) | 22,147 | 7,704 | 3,534 | 4,345 | 11 | |
| | *Dec. 1, 1904* | 19,332 | (1) | 18,921 | 7,907 | 3,330 | 4,267 | (1) | (1) |
| | *Dec. 1, 1900* | 18,940 | (1) | 16,807 | 9,693 | 3,267 | 4,195 | 8 | |
| | *Dec. 1, 1897* | 18,491 | ........ | 14,275 | 10,867 | ........ | 4,038 | ........ | (1) |
| | *Dec. 1, 1892* | 17,556 | ........ | 12,174 | 13,590 | 3,092 | 3,836 | 7 | |
| | *Jan. 10, 1883* | 15,787 | ........ | 9,206 | 19,190 | 2,641 | 3,523 | 10 | (1) |
| **Greece** | 1914 | 300 | (1) | 227 | 3,547 | 2,638 | 149 | 80 | 133 |
| **India:** | | | | | | | | | |
| **British** | 1913–14 | [5] 125,042 | 18,235 | (1) | [6] 23,092 | [6] 30,673 | [6] 1,643 | [6] 86 | [6] 1,501 |
| | 1909–10 | [5] 93,660 | 16,543 | (1) | [6] 22,897 | [6] 28,266 | [6] 1,514 | [6] 111 | [6] 1,337 |
| | 1904–05 | [5] 77,111 | 12,871 | (1) | [6] 17,562 | [6] 24,803 | [6] 1,278 | [6] 54 | [6] 1,177 |
| | 1899–00 | [5] 72,666 | 12,120 | (1) | [6] 17,805 | [6] 19,005 | [6] 1,308 | [6] 1,227 | |
| | 1894–95 | [5] 67,045 | 11,826 | (1) | [6] 17,260 | [6] 15,272 | [6] 1,134 | [6] 1,102 | |
| **Native States**[7] | 1913–14 | [5] 12,236 | 1,765 | (1) | 8,306 | | 175 | 181 | |
| | 1909–10 | [5] 10,391 | 1,559 | (1) | 7,129 | | 141 | 155 | |
| | 1904–05 | [5] 8,178 | 1,347 | (1) | 6,318 | | 92 | 129 | |
| | 1900–01 | [5] 7,397 | 1,228 | (1) | 4,538 | | 85 | 115 | |
| **Italy** | *Mar. 10, 1908* | 6,199 | 19 | 2,508 | 11,163 | 2,715 | 956 | 388 | 850 |
| | *Feb. 13, 1881* | 4,772 | 11 | 1,164 | 8,596 | 2,016 | [8] 658 | [8] 294 | [8] 674 |
| **Japanese Empire:** | | | | | | | | | |
| **Japan** | Dec. 31, 1913 | 1,389 | (1) | 310 | 3 | 89 | 1,582 | (1) | (1) |
| | Dec. 31, 1910 | 1,384 | (1) | 279 | 3 | 92 | 1,565 | (1) | (1) |
| | Dec. 31, 1905 | 1,168 | (1) | 228 | 4 | 72 | 1,368 | (1) | (1) |
| | Dec. 31, 1900 | 1,261 | (1) | 181 | 2 | 60 | 1,542 | (1) | (1) |
| **Chosen (Korea)** | 1912 | 1,041 | (1) | 625 | ........ | 10 | 47 | ........ | ........ |
| **Formosa (Taiwan)** | Dec. 31, 1913 | 428 | | 1,322 | 129 | | 187 | ........ | ........ |

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[1] No official statistics.
[2] Less than 500.
[3] Reindeer.
[4] Excluding army horses in 1914.
[5] Includes young buffaloes.
[6] Excludes Bengal.
[7] Figures incomplete.
[8] Census of Jan. 10, 1876.

## TABLE 145.—*Livestock in principal and other countries*—Continued.

### PRINCIPAL COUNTRIES—Continued.

| Country. | Date. | Cattle. | Buffaloes. | Swine. | Sheep. | Goats. | Horses. | Mules. | Asses. |
|---|---|---|---|---|---|---|---|---|---|
| | | *Thousand.* | *Thousand.* | *Thousand.* | *Thousand.* | *Thousand.* | *Thousand.* | *Thousand.* | *Thousand.* |
| Mexico | *June 30, 1902* | 5,142 | ........ | 616 | 3,424 | 4,206 | 859 | 334 | 288 |
| Netherlands | May, 1915 | 2,390 | ........ | 1,487 | ........ | ........ | ........ | ........ | ........ |
| | June, 1913 | 2,097 | ........ | 1,350 | 842 | 232 | 334 | (1) | (1) |
| | *May 20–June 20*, 1910 | 2,027 | ........ | 1,260 | 889 | 224 | 227 | (1) | (1) |
| | Dec. 31, 1904 | 1,691 | ........ | 862 | 607 | 166 | 295 | (1) | (1) |
| | Dec. 31, 1900 | 1,656 | ........ | 747 | 771 | 180 | 295 | (1) | (1) |
| | Dec. 31, 1890 | 1,533 | ........ | 579 | 819 | 165 | 273 | (1) | (1) |
| New Zealand | Apr. 30, 1915 | ........ | ........ | ........ | 24,901 | (1) | ........ | ........ | ........ |
| | *Apr. 1, 1911* | 2,020 | ........ | 349 | ........ | 6 | 404 | (2) | (2) |
| | *Apr. 30, 1911* | ........ | ........ | ........ | 23,996 | ........ | ........ | ........ | ........ |
| | Apr. 30, 1905 | ........ | ........ | ........ | 19,131 | ........ | ........ | ........ | ........ |
| | Oct., 1905 | 1,811 | ........ | 250 | ........ | (1) | 327 | (2) | (2) |
| | Apr. 30, 1900 | ........ | ........ | ........ | 19,355 | (1) | ........ | ........ | ........ |
| | Oct., 1900 | 1,257 | ........ | 251 | ........ | (1) | 266 | (2) | (2) |
| | Apr., 1895 | 1,048 | ........ | 240 | 19,827 | (1) | 237 | (2) | (2) |
| | *1891* | 832 | ........ | 309 | 18,128 | 9 | 211 | (2) | (2) |
| Norway | Sept. 30, 1910 | 1,134 | ........ | 334 | 1,398 | 288 | 168 | (1) | (1) |
| | *Sept. 30, 1907* | 1,089 | [3] 143 | 307 | 1,391 | 296 | 164 | (1) | (1) |
| | 1900 | 950 | [3] 109 | 165 | 999 | 215 | 173 | (1) | (1) |
| | 1890 | 1,006 | [3] 170 | 121 | 1,418 | 272 | 151 | (1) | (1) |
| Philippine Islands | Dec. 31, 1913 | 418 | 1,047 | 2,087 | 104 | 528 | 179 | (1) | (1) |
| | Dec. 31, 1910 | 270 | 757 | 1,682 | 94 | 441 | 143 | (1) | (1) |
| | *Dec. 31, 1902* | 128 | 641 | 1,179 | 30 | 121 | 144 | (1) | (1) |
| Portugal | *Oct., 1906* | 703 | ........ | 1,111 | 3,073 | 1,034 | 88 | 58 | 144 |
| | *1870* | 625 | ........ | 971 | 2,977 | 937 | 87 | 51 | 138 |
| Roumania | 1911 | 2,667 | | 1,021 | 5,269 | 187 | 825 | 4 | |
| | 1907 | 2,585 | | 1,124 | 5,105 | 191 | 808 | 5 | |
| | *Dec., 1900* | 2,545 | 44 | 1,709 | 5,655 | 233 | 864 | 1 | 7 |
| | 1890 | 2,520 | | 926 | 5,002 | 210 | 595 | 6 | |
| | 1884 | 2,376 | | 886 | 4,655 | 245 | 533 | 2 | |
| Russia, European (63 governments). | In summer, 1912. | 34,547 | [3] 464 | 11,945 | 42,736 | | 23,860 | (1) | (1) |
| | In summer, 1910. | 37,369 | [3] 462 | 11,584 | 45,629 | | 24,149 | (1) | (1) |
| | In summer, 1905. | 39,454 | [3] 437 | 12,276 | 53,438 | | 24,323 | (1) | (1) |
| Russia, Asiatic (27 governments). | In summer, 1912. | 13,349 | (1) | 1,564 | 31,331 | | 9,310 | (1) | (1) |
| | In summer, 1910. | 13,818 | (1) | 1,850 | 33,537 | | 9,017 | (1) | (1) |
| | In summer, 1909. | 12,710 | (1) | 1,616 | 32,573 | | 8,566 | (1) | (1) |
| Serbia | *Dec. 31, 1910* | 957 | 7 | 866 | 3,819 | 631 | 153 | 1 | 1 |
| | *Dec. 31, 1905* | 963 | 7 | 908 | 3,160 | 510 | 174 | 1 | 1 |
| Spain | *1913* | 2,879 | (1) | 2,710 | 16,441 | 3,394 | 542 | 948 | 849 |
| | Dec. 31, 1910 | 2,369 | (1) | 2,424 | 15,117 | 3,216 | 520 | 886 | 868 |
| | Dec. 31, 1906 | 2,497 | (1) | 2,080 | 13,481 | 2,440 | 440 | 802 | 744 |
| | 1891 | 2,218 | (1) | 1,928 | 13,359 | 2,534 | 397 | 768 | 754 |
| Sweden | Dec. 31, 1913 | 2,721 | ........ | 968 | 988 | 71 | 596 | (1) | (1) |
| | Dec. 31, 1910 | 2,748 | [3] 273 | 957 | 1,004 | 69 | 587 | (1) | (1) |
| | Dec. 31, 1905 | 2,550 | [3] 226 | 830 | 1,074 | 67 | 555 | (1) | (1) |
| | 1900 | 2,583 | [3] 232 | 806 | 1,261 | 80 | 533 | (1) | (1) |
| | 1890 | 2,399 | [3] 288 | 645 | 1,351 | 87 | 487 | (1) | (1) |
| Switzerland | *Apr. 21, 1911* | 1,443 | ........ | 570 | 161 | 341 | 144 | 3 | 2 |
| | *Apr. 20, 1906* | 1,498 | ........ | 549 | 210 | 362 | 135 | 3 | 2 |
| | *Apr. 19, 1901* | 1,340 | ........ | 555 | 219 | 355 | 125 | 3 | 2 |
| Turkey, European and Asiatic. | 1912 | (1) | (1) | 73 | 27,095 | 20,269 | (1) | (1) | (1) |
| | 1910 | (1) | (1) | 175 | 27,662 | 21,283 | (1) | (1) | (1) |
| | 1905 | (1) | (1) | 196 | 23,614 | 16,411 | (1) | (1) | (1) |
| Union of South Africa. | Dec. 31, 1913 | (1) | (1) | (1) | 35,711 | 11,521 | (1) | (1) | (1) |
| | *May 7, 1911* | 5,797 | (1) | 1,082 | 30,657 | 11,763 | 719 | 94 | 337 |
| | *1904* | 3,500 | (1) | 679 | 16,323 | 9,771 | 450 | 135 | 142 |
| United Kingdom | June 4, 1914 | 12,185 | ........ | 3,953 | 27,964 | (1) | 1,851 | (1) | (1) |
| | June 4, 1910 | 11,765 | ........ | 3,561 | 31,165 | (1) | 2,095 | (1) | (1) |
| | June 4, 1905 | 11,674 | ........ | 3,602 | 29,077 | (1) | 2,117 | (1) | (1) |
| | June 4, 1900 | 11,455 | ........ | 3,664 | 31,055 | (1) | 2,000 | (1) | (1) |
| | June 4, 1890 | 10,789 | ........ | 4,362 | 31,567 | (1) | 1,965 | (1) | (1) |
| | June 4, 1880 | 9,871 | ........ | 2,863 | 30,240 | (1) | 1,930 | (1) | (1) |
| Uruguay | *1908* | 8,193 | ........ | 180 | 26,286 | 20 | 556 | 18 | 4 |
| | *1900* | 6,827 | ........ | 94 | 18,609 | 20 | 561 | 23 | |
| | *1860* | 3,632 | ........ | 6 | 1,990 | 5 | 518 | 8 | |

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[1] No official statistics.

[2] Lot less than 500.

[3] Reindeer.

TABLE 145.—*Livestock in principal and other countries*—Continued.

OTHER COUNTRIES.

| Country. | Date. | Cattle. | Buffaloes. | Swine. | Sheep. | Goats. | Horses. | Mules. | Asses. |
|---|---|---|---|---|---|---|---|---|---|
| | | *Thousand.* | *Thousand.* | *Thousand.* | *Thousand.* | *Thousand.* | *Thousand.* | *Thousand.* | *Thousand.* |
| Azores and Madeira Islands | 1900 | 89 | ........ | 93 | 87 | 38 | 2 | 3 | 9 |
| Basutoland | *1911* | 437 | ........ | (1) | 1,369 | (1) | 88 | (1) | (1) |
| Bechuanaland Protectorate | *1911* | 324 | ........ | (1) | 358 | | [3] 4 | ........ | ........ |
| Bolivia | 1910 | 735 | ........ | 114 | 1,455 | 473 | 97 | 45 | 174 |
| British East Africa[3] | 1913 | 800 | (1) | 4 | 6,550 | 4,020 | 2 | (1) | (1) |
| British Guiana | Mar. 31, 1914 | 81 | ........ | 14 | 18 | 14 | 1 | 2 | 6 |
| Ceylon | 1914 | 1,484 | | 84 | 64 | 190 | 4 | (1) | (1) |
| Chile | 1914 | 1,969 | ........ | 221 | 4,602 | 299 | 458 | 38 | 33 |
| Costa Rica | *1914* | 336 | ........ | 64 | (4) | 1 | 52 | 2 | (4) |
| Cuba | Dec. 31, 1912 | 2,830 | ........ | (1) | (1) | (1) | 561 | 41 | 2 |
| Cyprus | 1913 | 61 | (1) | 37 | 265 | [5] 253 | 68 | (1) | (1) |
| Dutch East Indies: | | | | | | | | | |
| Java and Madura | 1913 | 4,786 | | (1) | (1) | (1) | 274 | (1) | (1) |
| Other | 1905 | 449 | 447 | (1) | (1) | (1) | 119 | (1) | (1) |
| Dutch Guiana | 1912 | 7 | ........ | 4 | (4) | 3 | (4) | (4) | 1 |
| Egypt | Aug.-Sept. 1913 | 637 | 633 | (1) | (1) | (1) | 48 | 23 | 682 |
| Falkland Islands | 1913 | 8 | ........ | (4) | 715 | (1) | 4 | (1) | (1) |
| Faroe Islands | 1914 | 4 | ........ | (4) | 112 | (4) | 1 | (1) | (1) |
| Fiji | 1913 | 49 | ........ | 2 | 3 | 15 | [3] 7 | (1) | (1) |
| Guam | 1913 | 5 | | (1) | (1) | (1) | (1) | (1) | (1) |
| Gambia | 1907 | 83 | ........ | (1) | (1) | (1) | 4 | (1) | (1) |
| Guatemala | 1913 | 557 | ........ | 188 | 514 | 11 | 64 | 33 | |
| German East Africa | 1913 | 3,994 | ........ | 6 | 6,440 | 25 | (4) | (4) | 25 |
| German Southwest Africa | 1913 | 206 | ........ | 8 | 555 | 517 | 16 | 14 | |
| Honduras | 1914 | 489 | ........ | 180 | 6 | 23 | 68 | 25 | |
| Iceland | 1912 | 26 | ........ | ........ | 601 | 1 | 46 | (1) | (1) |
| Jamaica | 1913 | 116 | ........ | 31 | 10 | [5] 18 | 53 | (1) | (1) |
| Luxemburg | *Dec. 1, 1913* | 102 | ........ | 137 | 5 | 10 | 19 | (1) | (1) |
| Madagascar | 1914 | ........ | [6] 6,878 | 643 | 168 | | 2 | (4) | (4) |
| Malta | 1913 | 4 | ........ | 4 | 15 | [5] 14 | [3] 9 | ........ | ........ |
| Mauritius | 1913 | 41 | ........ | 17 | 2 | 37 | 2 | 1 | (1) |
| Newfoundland | *1911* | 39 | ........ | 27 | 98 | 17 | 14 | (1) | (1) |
| Nicaragua | *1908* | 252 | ........ | 12 | (4) | 1 | 28 | 6 | 1 |
| Nyasaland Protectorate | 1913 | 75 | | 23 | 28 | [5] 137 | (4) | (1) | (1) |
| Panama | 1905 | 65 | ........ | 28 | (1) | 3 | 17 | 2 | (1) |
| Rhodesia | *1911* | 500 | ........ | 2 | 300 | [7] 602 | 20 | | |
| Salvador | 1906 | 284 | ........ | 423 | 21 | (1) | 74 | (1) | (1) |
| Siam | 1913 | 2,360 | 2,141 | 749 | ........ | ........ | 82 | (1) | (1) |
| Straits Settlements | 1914 | 40 | ........ | 113 | 35 | 18 | 2 | (1) | (1) |
| Swaziland | 1913 | 74 | ........ | 9 | 170 | | 1 | (1) | (1) |
| Trinidad and Tobago | 1914 | 13 | ........ | 9 | 2 | 6 | 5 | 5 | (1) |
| Tunis | *July 31, 1915* | 269 | ........ | 12 | 1,119 | 499 | 38 | 30 | 86 |
| Uganda Protectorate[3] | 1913 | 778 | ........ | 1 | 542 | | (3) | (4) | (4) |
| Venezuela | 1912 | 2,004 | ........ | 1,618 | 177 | 1,667 | 191 | 89 | 313 |

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[1] No official statistics.
[2] Figures incomplete.
[3] Includes mules and asses.
[4] Less than 500.
[5] In 1912.
[6] Zebus.
[7] Southern Rhodesia only.

## TABLE 146.—*Hides and skins: International trade, calendar years 1912–1914.*

This table gives the classification as found in the original returns, and the summary statements for "All countries" represent the total for each class only so far as it is disclosed in the original returns. The following kinds are included: Alligator, buffalo, calf, camel, cattle, deer, goat and kid, horse and colt, kangaroo, mule and ass, sheep and lamb, and all other kinds except furs, bird skins, sheepskins with wool on, skins of rabbits and hares, and tanned or partly tanned hides and skins. See "General note," p. 417.]

### EXPORTS.

[000 omitted.]

| Country and classification. | 1912 | 1913 | 1914 (prelim.). |
|---|---|---|---|
| Argentina: | *Pounds.* | *Pounds.* | *Pounds.* |
| Cattle, dried | 69,469 | 46,779 | 31,984 |
| Cattle, salted | 173,524 | 144,963 | 140,118 |
| Deer | 12 | 1 | 1 |
| Goat | 5,082 | 4,387 | 3,193 |
| Horse, dried | 2,593 | 2,297 | 2,464 |
| Horse, salted | 373 | 310 | 610 |
| Kid | 840 | 995 | 406 |
| Sheep and lamb | 76,456 | 47,920 | 33,330 |
| Austria-Hungary: | | | |
| Calf, dried | 3,405 | 3,177 | .......... |
| Calf, green | 20,591 | 22,004 | .......... |
| Cattle, dried | 8,253 | 7,795 | .......... |
| Cattle, green | 34,593 | 27,371 | .......... |
| Goat | 2,160 | 2,014 | .......... |
| Horse, dried | 1,077 | 1,230 | .......... |
| Horse, green | 3,082 | 3,810 | .......... |
| Kid | 1,249 | 1,355 | .......... |
| Lamb | 3,953 | 3,138 | .......... |
| Sheep | 2,808 | 5,884 | .......... |
| Unclassified | 1,151 | 1,351 | .......... |
| Belgium: | | | |
| Unclassified | 123,926 | 116,608 | .......... |
| Brazil: | | | |
| Cattle, dried | 16,316 | 20,460 | 19,569 |
| Cattle, green | 63,611 | 56,866 | 49,730 |
| Deer | 227 | 387 | 284 |
| Goat | 5,158 | 5,062 | 3,786 |
| Sheep | 1,612 | 1,594 | 1,337 |
| Unclassified | 34 | 82 | 76 |
| British India: | | | |
| Hides, unclassified | 127,446 | 124,708 | 97,632 |
| Goat | 57,961 | 52,438 | 46,906 |
| Skins, unclassified | 4,879 | 6,971 | 5,709 |
| British South Africa: | | | |
| Cattle | 20,595 | 21,515 | 14,765 |
| Goat | 8,126 | 9,105 | 7,944 |
| Sheep | 29,103 | 32,319 | 30,403 |
| Canada: | | | |
| Sheep | 82 | 36 | .......... |
| Hides and skins, not elsewhere specified [1] | 48,000 | 60,000 | 53,000 |
| China: | | | |
| Buffalo | 43,920 | 66,405 | 55,616 |
| Horse | 509 | 1,518 | 1,542 |
| Goat | 18,362 | 22,176 | 17,368 |
| Sheep | 753 | 1,105 | 739 |
| Chosen (Korea): | | | |
| Cattle | 4,448 | 4,649 | .......... |
| Cuba: | | | |
| Cattle | 14,382 | 14,207 | 14,458 |
| Unclassified | 3 | 322 | 121 |
| Denmark: | | | |
| Unclassified | 24,403 | 20,814 | .......... |
| Dutch East Indies: | | | |
| Unclassified | 17,088 | 16,011 | .......... |
| Egypt: | | | |
| Cattle and camel | 7,003 | 7,029 | 6,883 |
| Sheep and goat | 2,598 | 2,946 | 2,211 |
| France: | | | |
| Calf | 32,153 | 34,164 | .......... |
| Goat | 4,215 | 5,411 | .......... |
| Kid | 2,863 | 2,601 | .......... |
| Lamb | 1,722 | 1,983 | .......... |
| Sheep | 15,992 | 13,030 | .......... |
| Unclassified | 79,097 | 82,304 | .......... |
| Germany: | *Pounds.* | *Pounds.* | *Pounds.* |
| Calf | 27,207 | 19,158 | .......... |
| Cattle | 111,671 | 104,653 | .......... |
| Goat | 2,884 | 2,912 | .......... |
| Horse | 14,959 | 14,594 | .......... |
| Sheep | 725 | 947 | .......... |
| Unclassified | 953 | 1,296 | .......... |
| Italy: | | | |
| Cattle | 35,203 | 48,094 | 33,742 |
| Calf | 5,405 | 7,446 | 5,379 |
| Goat | 954 | 1,191 | 598 |
| Kid | 939 | 989 | 644 |
| Lamb | 2,336 | 2,207 | 2,043 |
| Sheep | 1,017 | 782 | 517 |
| Unclassified | 897 | 1,316 | 1,067 |
| Mexico: | | | |
| Alligator | 132 | [2] 132 | .......... |
| Cattle | 32,635 | [2] 32,635 | .......... |
| Deer | 646 | [2] 646 | .......... |
| Goat | 5,624 | [2] 5,624 | .......... |
| Sheep | 2 | [2] 2 | .......... |
| Netherlands: | | | |
| Hides, dried | 21,645 | 24,161 | .......... |
| Hides, fresh | 494 | 162 | .......... |
| Hides, salted | 42.510 | 42.399 | .......... |
| Sheep | 1,647 | 993 | .......... |
| New Zealand: | | | |
| Hides, unclassified [3] | 5,138 | 5,927 | .......... |
| Sheep | 20,402 | 20,671 | .......... |
| Skins, unclassified | 1,001 | 1,077 | .......... |
| Peru: | | | |
| Cattle | 5,879 | 6,930 | 4,826 |
| Goat | 822 | 872 | 944 |
| Sheep | 99 | 172 | 151 |
| Russia: | | | |
| Hides, large | 55,591 | 54,411 | 45,105 |
| Hides, small | 55,003 | 36,676 | |
| Sheep and goat | 26,752 | 23,471 | 15,384 |
| Singapore: | | | |
| Hides, unclassified | 7,163 | [2] 7,163 | .......... |
| Spain: | | | |
| Goat | 1,801 | 1,923 | 1,019 |
| Sheep | 8,574 | 9,203 | 8,597 |
| Unclassified | 8,202 | 6,470 | 2,678 |
| Sweden: | | | |
| Cattle, wet | 23,149 | 21,359 | .......... |
| Cattle, dry | 395 | 366 | .......... |
| Horse, wet | 620 | 813 | .......... |
| Horse, dry | 2 | 1 | .......... |
| Goat, kid, lamb, and sheep, wet | 798 | 688 | .......... |
| Goat, lamb, and sheep, dry | 110 | 157 | .......... |
| Unclassified, dry | 6 | 8 | .......... |
| Unclassified, wet | 130 | 175 | .......... |
| Switzerland: | | | |
| Hides, unclassified | 15,897 | 15,673 | .......... |
| Skins, unclassified | 7,174 | 8,178 | .......... |
| United Kingdom: | | | |
| Cattle | .......... | 2,175 | 589 |
| Hides, unclassified | 3,140 | 22,213 | 17,588 |
| Sheepskins | 18,463 | 17,837 | 14,055 |

[1] Unofficial estimate.
[2] Year preceding.
[3] Number of pounds computed from stated number of hides and skins.

TABLE 146.—*Hides and skins: International trade, calendar years 1912–1914*—Contd.

EXPORTS—Continued.

| Country and classification. | 1912 | 1913 | 1914 (prelim.). |
|---|---|---|---|
| United States: | *Pounds.* | *Pounds.* | *Pounds.* |
| Calf | 780 | 583 | 798 |
| Cattle | 20,514 | 14,454 | 15,310 |
| Unclassified | 7,085 | 7,119 | 5,476 |
| Uruguay: | | | |
| Calf | [1] 429 | [1] 429 | 290 |
| Cattle, dried | [1] 18,560 | [1] 18,560 | 6,599 |
| Cattle, salted | [1] 29,485 | [1] 29,485 | 2,520 |
| Horse, dried | [1] 526 | [1] 526 | .......... |
| Horse, salted | [1] 54 | [1] 54 | .......... |
| Lamb | [1] 503 | [1] 503 | 48 |
| Sheep | 22,825 | [1] 17,597 | 9,568 |
| Yearling, dried | [1] 3,112 | [1] 3,112 | .......... |
| Yearling, salted | [1] 100 | [1] 100 | .......... |
| Venezuela: | | | |
| Cattle | 7,426 | 7,013 | 6,587 |
| Deer | 483 | 354 | 362 |
| Goat | 3,439 | 1,606 | 2,041 |
| Other countries: | | | |
| Hides— | | | |
| Cattle and buffalo | 102,516 | 106,630 | .......... |
| Horse | 645 | 361 | .......... |
| Skins— | | | |
| Alligator | 65 | 72 | .......... |
| Calf | 4,891 | 4,033 | .......... |
| Deer | 1,491 | 1,441 | .......... |
| Other countries—Continued. | *Pounds.* | *Pounds.* | *Pounds.* |
| Skins—Con. | | | |
| Goat and kid | 18,534 | 18,246 | .......... |
| Sheep and lamb | 15,613 | 17,864 | .......... |
| Sheep and goat, mixed | 11,750 | 11,687 | .......... |
| Unclassified | 54,514 | 54,370 | .......... |
| Total | 2,116,701 | 2,024,754 | .......... |
| All countries: | | | |
| Hides— | | | |
| Cattle and buffalo | 846,687 | 810,393 | .......... |
| Horse | 24,440 | 25,514 | .......... |
| Skins— | | | |
| Alligator | 197 | 204 | .......... |
| Calf | 94,861 | 94,206 | .......... |
| Deer | 2,859 | 2,829 | .......... |
| Goat and kid | 141,013 | 138,907 | .......... |
| Sheep and lamb | 224,687 | 195,787 | .......... |
| Sheep and goat, mixed | 42,008 | 38,949 | .......... |
| Unclassified | 739,949 | 717,965 | .......... |
| Total | 2,116,701 | 2,024,754 | .......... |

IMPORTS.

| Country and classification. | 1912 | 1913 | 1914 (prelim.). |
|---|---|---|---|
| Austria-Hungary: | | | |
| Calf, dried | 916 | 1,071 | .......... |
| Calf, green | 1,256 | 1,581 | .......... |
| Cattle, dried | 37,877 | 42,309 | .......... |
| Cattle, green | 35,006 | 37,440 | .......... |
| Goat | 1,214 | 1,500 | .......... |
| Horse, dried | 73 | 245 | .......... |
| Horse, green | 169 | 243 | .......... |
| Kid | 482 | 586 | .......... |
| Lamb | 10,299 | 10,124 | .......... |
| Sheep | 3,027 | 3,770 | .......... |
| Unclassified | 715 | 608 | .......... |
| Belgium: | | | |
| Hides, green | 186,116 | 197,072 | .......... |
| British India: | | | |
| Cattle | 21,174 | 14,401 | 15,301 |
| Hides, unclassified | 657 | 401 | 432 |
| Skins, unclassified | 5,453 | 5,336 | 4,823 |
| Canada: | | | |
| Unclassified | 64,300 | 44,667 | 50,782 |
| Denmark: | | | |
| Unclassified | 11,794 | 10,766 | .......... |
| Finland: | | | |
| Hides, dried | 4,919 | 6,200 | .......... |
| Hides, green | 5,336 | 6,374 | .......... |
| Sheep | 515 | 310 | .......... |
| France: | | | |
| Calf | 4,743 | 5,123 | .......... |
| Goat | 19,928 | 19,131 | .......... |
| Kid | 4,406 | 4,151 | .......... |
| Lamb | 360 | 334 | .......... |
| Sheep | 4,365 | 3,139 | .......... |
| Unclassified | 119,530 | 131,148 | .......... |
| Germany: | | | |
| Calf, dried | 13,232 | 10,641 | .......... |
| Calf, green | 63,464 | 75,846 | .......... |
| Cattle, dried | 88,521 | 120,063 | .......... |
| Cattle, green | 236,646 | 249,518 | .......... |
| Goat, with hair on | 21,767 | 24,426 | .......... |
| Horse, dried | 3,884 | 4,333 | .......... |
| Germany—Contd. | | | |
| Horse, green | 22,896 | 25,096 | .......... |
| Sheep and lamb | 2,689 | 2,582 | .......... |
| Unclassified | 2,069 | 2,239 | .......... |
| Greece: | | | |
| Hides, unclassified | 5,257 | 5,219 | .......... |
| Italy: | | | |
| Calf | 1,306 | 1,211 | 726 |
| Cattle | 46,517 | 47,615 | 35,965 |
| Sheep | 3,115 | 4,270 | 2,502 |
| Goat | 41 | 104 | 90 |
| Kid | 75 | 61 | 20 |
| Lamb | 675 | 537 | 363 |
| Unclassified | 83 | 184 | 162 |
| Japan: | | | |
| Cattle | 5,673 | 7,171 | .......... |
| Deer | 442 | 509 | .......... |
| Netherlands: | | | |
| Hides, dried | 35,791 | 41,384 | .......... |
| Hides, fresh | 13 | 25 | .......... |
| Hides, salted | 36,517 | 34,189 | .......... |
| Sheep | 4,492 | 4,812 | .......... |
| Norway: | | | |
| Hides, dry | 3,475 | 3,507 | 1,998 |
| Hides, green | 11,267 | 9,336 | 8,503 |
| Hides, salted | 447 | 608 | .......... |
| Skins, unclassified | 131 | 29 | .......... |
| Portugal: | | | |
| Hides, dried | 7,398 | 5,895 | .......... |
| Hides, green | 178 | 339 | .......... |
| Roumania: | | | |
| Buffalo and cattle | 6,900 | [1] 6,900 | .......... |
| Calf | 57 | [1] 57 | .......... |
| Horse and swine | 17 | [1] 17 | .......... |
| Sheep, lamb, and goat | 812 | [2] 812 | .......... |
| Russia: | | | |
| Hides, dry | 10,326 | 14,110 | 6,175 |
| Hides, green | 72,973 | 102,700 | 58,972 |
| Goat and kid | 3,239 | 3,399 | 719 |
| Sheep | 8,829 | 10,078 | 2,311 |

[1] Data for 1910.

[2] Year preceding.

**TABLE 146.**—*Hides and skins: International trade, calendar years 1912–1914*—Contd.

IMPORTS—Continued.

| Country and classification. | 1912 | 1913 | 1914 (prelim.). |
|---|---|---|---|
|  | *Pounds.* | *Pounds.* | *Pounds.* |
| **Singapore:** |  |  |  |
| Hides, unclassified | 10,965 | [1] 10,965 | .......... |
| **Spain:** |  |  |  |
| Unclassified | 21,556 | 18,236 | 11,977 |
| **Sweden:** |  |  |  |
| Cattle, wet | 18,733 | 19,159 | .......... |
| Cattle, dry | 6,513 | 7,000 | .......... |
| Horse, wet | 109 | 26 | .......... |
| Goat, kid, lamb, and sheep, wet | 346 | 343 | .......... |
| Goat, lamb, and sheep, dry | 649 | 365 | .......... |
| Unclassified, wet | 15 | .......... | .......... |
| Unclassified, dry | 33 | 65 | .......... |
| **United Kingdom:** |  |  |  |
| Calf, dry | 215 | 24 | 167 |
| Calf, wet | 2,893 | 666 | 1,016 |
| Goat[2] | 7,308 | 7,203 | 7,541 |
| Hides, dry and wet | 107,506 | 105,165 | 117,535 |
| Sheep[2] | 4,750 | 1,717 | 1,283 |
| **United States:** |  |  |  |
| Calf, dry | 49,314 | 26,302 | 13,899 |
| Calf, green or pickled | 65,546 | 50,152 | 53,016 |
| Cattle and buffalo, dry | 107,234 | 77,625 | 83,730 |
| Cattle, and buffalo, green, or pickled | 207,695 | 158,655 | 236,773 |
| Goat, dry | 70,291 | 64,509 | 57,983 |
| Goat, green or pickled | 25,032 | 25,168 | 17,872 |
| Horse, dry | 8,742 | 9,726 | 5,810 |
| Horse, green or pickled | 5,959 | 7,425 | 4,806 |
| **United States**—Con. | *Pounds.* | *Pounds.* | *Pounds.* |
| Kangaroo | 458 | 1,309 | 1,008 |
| Sheep, dry | 30,749 | 27,552 | 24,999 |
| Sheep, green or pickled | 37,482 | 40,654 | 40,945 |
| Unclassified | 6,603 | 8,803 | 15,353 |
| **Other countries:** |  |  |  |
| Hides— |  |  |  |
| Cattle and buffalo | 14,226 | 14,684 | .......... |
| Horse | 44 | 54 | .......... |
| Skins— |  |  |  |
| Deer | 4 | 12 | .......... |
| Goat and kid | 549 | 556 | .......... |
| Sheep and lamb | 1,294 | 906 | .......... |
| Sheep and goat, mixed | 42 | 235 | .......... |
| Unclassified | 34,270 | 48,221 | .......... |
| Total | 2,112,969 | 2,101,334 | .......... |
| **All countries:** |  |  |  |
| Hides— |  |  |  |
| Cattle and buffalo | 832,715 | 802,540 | .......... |
| Horse | 41,893 | 47,165 | .......... |
| Skins— |  |  |  |
| Calf | 202,942 | 172,674 | .......... |
| Deer | 446 | 521 | .......... |
| Goat and kid | 154,332 | 150,794 | .......... |
| Kangaroo | 458 | 1,309 | .......... |
| Sheep and lamb | 112,641 | 110,785 | .......... |
| Sheep and goat, mixed | 1,849 | 1,755 | .......... |
| Unclassified | 765,693 | 813,791 | .......... |
| Total | 2,112,969 | 2,101,334 | .......... |

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[1] Year preceding.

[2] Number of pounds computed from stated number of skins.

## HORSES AND MULES.

TABLE 147 —*Horses and mules Number and value on farms in the United States, 1867–1916.*

NOTE.—Figures in *italics* are census returns figures in roman are estimates of the Department of Agriculture Estimates of numbers are obtained by applying estimated percentages of increase or decrease to the published numbers of the preceding year, except that a revised base is used for applying percentage estimates whenever new census data are available It should also be observed that the census of 1910, giving numbers as of Apr 15, is not strictly comparable with former censuses, which related to numbers June 1

| Jan 1— | Horses | | | Mules | | |
|---|---|---|---|---|---|---|
| | Number | Price per head Jan 1 | Farm value Jan 1 | Number | Price per head Jan 1 | Farm value Jan 1 |
| 1867 | 5,401,000 | $59 05 | $318,924,000 | 822,000 | $66 94 | $55,048,000 |
| 1868 | 5,757,000 | 54 27 | 312,416,000 | 856,000 | 56 04 | 47,954,000 |
| 1869 | 6,333,000 | 62 57 | 396,222,000 | 922,000 | 79 23 | 73,027,000 |
| 1870 | 8,249,000 | 67 43 | 556,251,000 | 1,180,000 | 90 42 | 106,654,000 |
| *1870, census, June 1* | *7,145,370* | | | *1,125,415* | | |
| 1871 | 8 702,000 | 71 14 | 619,039,000 | 1,242,000 | 91 98 | 114,272,000 |
| 1872 | 8,991,000 | 67 41 | 606,111,000 | 1,276 000 | 87 14 | 111,222,000 |
| 1873 | 9 222,000 | 66 39 | 612,273,000 | 1,310 000 | 85 15 | 111,546,000 |
| 1874 | 9,334,000 | 65 15 | 608,073,000 | 1,339,000 | 81 35 | 108,953,000 |
| 1875 | 9,504,000 | 61 10 | 580,708,000 | 1,394,000 | 71 89 | 100,197,000 |
| 1876 | 9 735,000 | 57 29 | 557,747,000 | 1,414,000 | 66 46 | 94,001,000 |
| 1877 | 10 155 000 | 55 83 | 567,017,000 | 1,444,000 | 64 07 | 92,482,000 |
| 1878 | 10 330,000 | 56 63 | 584 999,000 | 1,638 000 | 62 03 | 101,579,000 |
| 1879 | 10 939,000 | 52 36 | 572,712 000 | 1,713,000 | 56 00 | 95,942,000 |
| 1880 | 11,202,000 | 54 75 | 613,297,000 | 1,730 000 | 61 26 | 105,948,000 |
| *1880, census, June 1* | *10,357,488* | | | *1,812,808* | | .. |
| 1881 | 11,430,000 | 58 44 | 667,954,000 | 1,721,000 | 69 79 | 120,096,000 |
| 1882 | 10,522,000 | 58 53 | 615,825,000 | 1,835,000 | 71 35 | 130,945,000 |
| 1883 | 10 838,000 | 70 59 | 765,041,000 | 1,871 000 | 79 49 | 148,732,000 |
| 1884 | 11,170,000 | 74 64 | 833 734,000 | 1,914 000 | 84 22 | 161,215,000 |
| 1885 | 11,565,000 | 73 70 | 852,283,000 | 1,973,000 | 82 38 | 162,497,000 |
| 1886 | 12,078,000 | 71 27 | 860,823 000 | 2,053 000 | 79 60 | 163,381,000 |
| 1887 | 12,497 000 | 72 15 | 901,686 000 | 2,117,000 | 78 91 | 167,058,000 |
| 1888 | 13 173,000 | 71 82 | 946 096,000 | 2,192,000 | 79 78 | 174,854,000 |
| 1889 | 13,663,000 | 71 89 | 982,195,000 | 2,258,000 | 79 49 | 179,444,000 |
| 1890 | 14,214,000 | 68 84 | 978,517,000 | 2,331,000 | 78 25 | 182,394,000 |
| *1890, census, June 1* | *14,969,469* | | | *2,295,532* | .. | .. . |
| 1891 | 14 057,000 | 67 00 | 941,823,000 | 2,297,000 | 77 88 | 178,847,000 |
| 1892 | 15,498 000 | 65 01 | 1,007,594,000 | 2,315,000 | 75 55 | 174,882,000 |
| 1893 | 16 207,000 | 61 22 | 992,225,000 | 2,331,000 | 70 68 | 164,764,000 |
| 1894 | 16 081 000 | 47 83 | 769,225,000 | 2,352,000 | 62 17 | 146 233,000 |
| 1895 | 15,893,000 | 36 29 | 576,731,000 | 2,333,000 | 47 55 | 110,928,000 |
| 1896 | 15 124,000 | 33 07 | 500,140,000 | 2,279,000 | 45 29 | 103,204,000 |
| 1897 | 14 365,000 | 31 51 | 452,649,000 | 2,216 000 | 41 66 | 92,302,000 |
| 1898 | 13,961,000 | 34 26 | 478,362,000 | 2,190 000 | 43 88 | 96,110,000 |
| 1899 | 13,665,000 | 37 40 | 511,075,000 | 2,134,000 | 44 96 | 95,963,000 |
| 1900 | 13,538,000 | 44 61 | 603,969,000 | 2,086,000 | 53 55 | 111,717,000 |
| *1900, census, June 1* | *18,267,020* | . | .. | *3,264,615* | .. | .. .. .. . |
| 1901 [1] | 16 745,000 | 52 86 | 885,200,000 | 2,864,000 | 63 97 | 183,232,000 |
| 1902 | 16,531,000 | 58 61 | 968,935,000 | 2,757,000 | 67 61 | 186,412,000 |
| 1903 | 16,557,000 | 62 25 | 1,030,706,000 | 2,728,000 | 72 49 | 197,753,000 |
| 1904 | 16 736,000 | 67 93 | 1,136 940 000 | 2,758,000 | 78 88 | 217,533,000 |
| 1905 | 17,058,000 | 70 37 | 1,200,310,000 | 2,889,000 | 87 18 | 251,840,000 |
| 1906 | 18,719,000 | 80 72 | 1,510,890,000 | 3,404,000 | 98.31 | 334,681,000 |
| 1907 | 19 747,000 | 93 51 | 1,846,578,000 | 3,817,000 | 112 16 | 428,064 000 |
| 1908 | 19 992,000 | 93 41 | 1,867,530 000 | 3,869,000 | 107 76 | 416 939,000 |
| 1909 | 20,640,000 | 95 64 | 1,974,052,000 | 4,053,000 | 107 84 | 437,082,000 |
| 1910 | 21,040,000 | | | 4,123,000 | .. | |
| *1910, census, Apr 15* | *19,833,113* | 108 03 | 2,142,524,000 | *4,209,769* | 120 20 | 506,049,000 |
| 1911 [1] | 20,277,000 | 111 46 | 2,259,981,000 | 4,323,000 | 125 92 | 544,359,000 |
| 1912 | 20 509,000 | 105 94 | 2,172,694,000 | 4,362,000 | 120 51 | 525,657,000 |
| 1913 | 20,567,000 | 110 77 | 2,278,222,000 | 4,386,000 | 124 31 | 545,245,000 |
| 1914 | 20,962,000 | 109 32 | 2,291,638,000 | 4,449,000 | 123 85 | 551,017,000 |
| 1915 | 21,195,000 | 103 33 | 2,190,102,000 | 4,479 000 | 112.36 | 503,271,000 |
| 1916. .. | 21,166,000 | 101.60 | 2,150,468,000 | 4,565,000 | 113 87 | 519,824,000 |

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[1] Estimates of numbers revised, based on census data

## HORSES AND MULES—Continued.

TABLE 148.—*Horses and mules: Number and value on farms Jan. 1, 1915 and 1916, by States.*

| State. | Horses. | | | | | | Mules. | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Number (thousands) Jan. 1— | | Average price per head, Jan. 1— | | Farm value (thousands of dollars) Jan. 1— | | Number (thousands) Jan. 1— | | Average price per head, Jan. 1— | | Farm value (thousands of dollars) Jan. 1— | |
| | 1916 | 1915 | 1916 | 1915 | 1916 | 1915 | 1916 | 1915 | 1916 | 1915 | 1916 | 1915 |
| Me. | 112 | 113 | $142.00 | $146.00 | $15,904 | $16,498 | ..... | ..... | ..... | ..... | ..... | ..... |
| N. H. | 47 | 47 | 132.00 | 127.00 | 6,204 | 5,969 | ..... | ..... | ..... | ..... | ..... | ..... |
| Vt. | 89 | 88 | 130.00 | 131.00 | 11,570 | 11,528 | ..... | ..... | ..... | ..... | ..... | ..... |
| Mass. | 63 | 64 | 146.00 | 155.00 | 9,198 | 9,920 | ..... | ..... | ..... | ..... | ..... | ..... |
| R. I. | 9 | 10 | 151.00 | 146.00 | 1,359 | 1,460 | ..... | ..... | ..... | ..... | ..... | ..... |
| Conn. | 46 | 47 | 146.00 | 148.00 | 6,716 | 6,956 | ..... | ..... | ..... | ..... | ..... | ..... |
| N. Y. | 609 | 615 | 139 00 | 142.00 | 84,651 | 87,330 | 4 | 4 | $148.00 | $152.00 | $592 | $608 |
| N. J. | 92 | 92 | 144.00 | 146.00 | 13,248 | 13,432 | 4 | 4 | 164.00 | 169.00 | 656 | 676 |
| Pa. | 602 | 596 | 124.00 | 134.00 | 74,648 | 79,864 | 47 | 46 | 137.00 | 142.00 | 6,439 | 6,532 |
| Del. | 36 | 36 | 95.00 | 100.00 | 3,420 | 3,600 | 6 | 6 | 114.00 | 121.00 | 684 | 726 |
| Md. | 169 | 167 | 105.00 | 113.00 | 17,745 | 18,871 | 25 | 25 | 121.00 | 138.00 | 3,025 | 3,450 |
| Va. | 361 | 354 | 99.00 | 109.00 | 35,739 | 38,586 | 64 | 62 | 120.00 | 128.00 | 7,680 | 7,936 |
| W. Va. | 194 | 192 | 108.00 | 114.00 | 20,952 | 21,888 | 12 | 12 | 116.00 | 119.00 | 1,392 | 1,428 |
| N. C. | 182 | 182 | 122.00 | 130.00 | 22,204 | 23,660 | 196 | 194 | 140.00 | 151.00 | 27,440 | 29,294 |
| S. C. | 84 | 83 | 135.00 | 131.00 | 11,340 | 10,873 | 171 | 166 | 161.00 | 149.00 | 27,531 | 24,734 |
| Ga. | 125 | 125 | 126.00 | 119.00 | 15,750 | 14,875 | 315 | 309 | 156.00 | 140.00 | 49,140 | 43,260 |
| Fla. | 59 | 57 | 112.00 | 121.00 | 6,608 | 6,897 | 29 | 28 | 154.00 | 163.00 | 4,466 | 4,564 |
| Ohio. | 901 | 910 | 116.00 | 128.00 | 104,516 | 116,480 | 26 | 24 | 119.00 | 127.00 | 3,094 | 3,048 |
| Ind. | 854 | 54 | 104.00 | 114.00 | 88,816 | 97,356 | 95 | 86 | 111.00 | 117.00 | 10,545 | 10,062 |
| Ill. | 1,452 | 1,467 | 103.00 | 105.00 | 149,556 | 154,035 | 152 | 145 | 111.00 | 110.00 | 16,872 | 15,950 |
| Mich. | 680 | 673 | 128.00 | 132.00 | 87,040 | 88,836 | 4 | 4 | 133.00 | 131.00 | 532 | 524 |
| Wis. | 712 | 705 | 124.00 | 131.00 | 88,288 | 92,355 | 3 | 3 | 120.00 | 127.00 | 360 | 381 |
| Minn. | 872 | 872 | 109.00 | 116.00 | 95,048 | 101,152 | 6 | 6 | 116.00 | 124.00 | 696 | 744 |
| Iowa. | 1,584 | 1,600 | 105.00 | 105.00 | 166,320 | 168.000 | 61 | 58 | 110.00 | 111.00 | 6,710 | 6,438 |
| Mo. | 1,084 | 1,095 | 90.00 | 88.00 | 97,560 | 96,360 | 329 | 329 | 99.00 | 98.00 | 32,571 | 32,242 |
| N. Dak. | 801 | 785 | 110.00 | 110.00 | 88,110 | 86,350 | 9 | 8 | 124.00 | 122.00 | 1,116 | 976 |
| S. Dak. | 759 | 759 | 93.00 | 89.00 | 70,587 | 67,551 | 15 | 14 | 109.00 | 106.00 | 1,635 | 1,484 |
| Nebr. | 1,028 | 1,038 | 94.00 | 92.00 | 96,632 | 95,496 | 98 | 85 | 104.00 | 105.00 | 10,192 | 8,925 |
| Kans. | 1,109 | 1,132 | 97.00 | 93.00 | 107,573 | 105,276 | 245 | 233 | 105.00 | 102.00 | 25,725 | 23,766 |
| Ky. | 434 | 443 | 90.00 | 95.00 | 39,060 | 42,085 | 229 | 231 | 102.00 | 106.00 | 23,358 | 24,486 |
| Tenn. | 349 | 353 | 101.00 | 100.00 | 35,249 | 35,300 | 272 | 275 | 113.00 | 110.00 | 30,736 | 30,250 |
| Ala. | 150 | 149 | 101.00 | 96.00 | 15,150 | 14,304 | 281 | 281 | 121.00 | 114.00 | 34,001 | 32,034 |
| Miss. | 243 | 241 | 88.00 | 86.00 | 21,384 | 20,726 | 292 | 292 | 110.00 | 108.00 | 32,120 | 31,536 |
| La. | 193 | 191 | 82.00 | 83.00 | 15,826 | 15,853 | 132 | 132 | 121.00 | 125.00 | 15,972 | 16,500 |
| Tex. | 1,180 | 1,192 | 78.00 | 78.00 | 92,040 | 92,976 | 768 | 753 | 100.00 | 100.00 | 76,800 | 75,300 |
| Okla. | 743 | 758 | 85.00 | 81.00 | 63,155 | 61,398 | 282 | 269 | 98.00 | 96.00 | 27,636 | 25,824 |
| Ark. | 270 | 276 | 82.00 | 76.00 | 22,140 | 20,976 | 240 | 240 | 102.00 | 96.00 | 24,480 | 23,040 |
| Mont. | 430 | 391 | 86.00 | 86.00 | 36,980 | 33,626 | 4 | 4 | 98.00 | 98.00 | 392 | 392 |
| Wyo. | 180 | 176 | 82.00 | 79.00 | 14,760 | 13,904 | 2 | 2 | 99.00 | 101.00 | 198 | 202 |
| Colo. | 361 | 347 | 90.00 | 85.00 | 32,490 | 29,495 | 19 | 18 | 101.00 | 100.00 | 1,919 | 1,800 |
| N. M. | 234 | 217 | 58.00 | 55.00 | 13,572 | 11,935 | 17 | 16 | 85.00 | 81.00 | 1,445 | 1,296 |
| Ariz. | 124 | 118 | 71.00 | 70.00 | 8,804 | 8,260 | 7 | 7 | 99.00 | 104.00 | 693 | 728 |
| Utah. | 146 | 146 | 86.00 | 86.00 | 12,556 | 12,556 | 2 | 2 | 78.00 | 79.00 | 156 | 158 |
| Nev. | 77 | 78 | 75.00 | 69.00 | 5,775 | 5,382 | 3 | 3 | 75.00 | 79.00 | 225 | 237 |
| Idaho. | 241 | 243 | 90.00 | 92.00 | 21,690 | 22,356 | 4 | 4 | 95.00 | 85.00 | 380 | 340 |
| Wash. | 308 | 311 | 94.00 | 96.00 | 28,952 | 29,856 | 15 | 15 | 106.00 | 104.00 | 1,590 | 1,560 |
| Oreg. | 295 | 304 | 89.00 | 90.00 | 26,255 | 27,360 | 10 | 10 | 93.00 | 96.00 | 930 | 960 |
| Cal. | 493 | 503 | 96.00 | 100.00 | 47,328 | 50,300 | 70 | 74 | 110.00 | 120.00 | 7,700 | 8,880 |
| U. S. | 21,166 | 21,195 | 101.60 | 103.33 | 2,150,468 | 2,190,102 | 4,565 | 4,479 | 113.87 | 112.36 | 519,824 | 503,271 |

## HORSES AND MULES—Continued.

TABLE 149.—*Prices of horses and mules at National Stock Yards, National Stock Yards, Illinois.*

| Year and month. | Range of prices. | |
|---|---|---|
| | Horses, grade, good to choice draft. | Mules, grade, 16 to 16½ hands. |
| 1900 | $140-$190 | $90-$150 |
| 1901 | 150- 175 | 110- 165 |
| 1902 | 160- 185 | 120- 160 |
| 1903 | 160- 185 | 120- 175 |
| 1904 | 175- 200 | 135- 200 |
| 1905 | 175- 225 | 120- 210 |
| 1906 | 175- 225 | 125- 215 |
| 1907 | 175- 225 | 125- 250 |
| 1908 | 175- 250 | 125- 200 |
| 1909 | 140- 225 | 130- 225 |
| 1910 | 165- 240 | 150- 275 |
| 1911 | 165- 235 | 150- 275 |
| 1912 | 165- 240 | 160- 285 |
| 1913 | 200- 250 | 160- 280 |
| 1914 | 175- 220 | 120- 250 |
| 1915. | | |
| January | $185-$220 | $125-$250 |
| February | 185- 220 | 125- 250 |
| March | 185- 225 | 125- 250 |
| April | 185- 225 | 120- 265 |
| May | 175- 220 | 120- 265 |
| June | 175- 220 | 125- 265 |
| July | 175- 220 | 125- 265 |
| August | 180- 220 | 135- 265 |
| September | 185- 225 | 135- 265 |
| October | 185- 225 | 135- 275 |
| November | 185- 225 | 135- 275 |
| December, first week | 175- 220 | 135- 270 |

## HORSES AND MULES—Continued.

TABLE 150.—*Average price per head for horses on the Chicago horse market, 1901–1915.*

| Date. | Drafters. | Carriage teams. | Drivers. | General. | Bussers, trammers. | Saddlers. | Southern chunks. |
|---|---|---|---|---|---|---|---|
| 1901 | $157.00 | $400.00 | $137.00 | $102.00 | $121.00 | $147.00 | $52.00 |
| 1902 | 166.00 | 450.00 | 145.00 | 117.00 | 135.00 | 151.00 | 57.00 |
| 1903 | 171.00 | 455.00 | 150.00 | 122.00 | 140.00 | 156.00 | 62.00 |
| 1904 | 177.00 | 475.00 | 150.00 | 140.00 | 140.00 | 160.00 | 64.00 |
| 1905 | 186.00 | 486.00 | 156.00 | 132.00 | 145.00 | 172.00 | 70.00 |
| 1906 | 188.00 | 486.00 | 158.00 | 154.00 | 147.00 | 174.00 | 72.50 |
| 1907 | 194.00 | 482.00 | 165.00 | 137.00 | 152.00 | 172.00 | 77.50 |
| 1908 | 180.00 | 450.00 | 156.00 | 129.00 | 138.00 | 164.00 | 69.00 |
| 1909 | 194.00 | 482.00 | 165.00 | 137.00 | 152.00 | 172.00 | 77.00 |
| 1910 | 200.00 | 473.00 | 172.00 | 144.00 | 161.00 | 177.00 | 87.00 |
| 1911 | 205.00 | 483.00 | 182.00 | 155.00 | 170.00 | 190.00 | 92.00 |
| 1912 | 210.00 | 473.00 | 177.00 | 160.00 | 175.00 | 195.00 | 97.00 |
| 1913 | 213.00 | 493.00 | 174.00 | 165.00 | 176.00 | 189.00 | 98.00 |
| 1914 | 208.00 | 483.00 | 169.00 | 160.00 | 171.00 | 184.00 | 93.00 |
| 1915. | | | | | | | |
| January | 205.00 | 440.00 | 165.00 | 150.00 | 160.00 | 180.00 | 90.00 |
| February | 215.00 | 490.00 | 170.00 | 155.00 | 170.00 | 190.00 | 95.00 |
| March | 220.00 | 510.00 | 175.00 | 160.00 | 175.00 | 195.00 | 100.00 |
| April | 220.00 | 510.00 | 175.00 | 160.00 | 175.00 | 195.00 | 100.00 |
| May | 215.00 | 510.00 | 170.00 | 155.00 | 170.00 | 190.00 | 95.00 |
| June | 210.00 | 510.00 | 165.00 | 150.00 | 165.00 | 185.00 | 90.00 |
| July | 205.00 | 480.00 | 165.00 | 145.00 | 165.00 | 180.00 | 85.00 |
| August | 195.00 | 470.00 | 160.00 | 140.00 | 160.00 | 175.00 | 80.00 |
| September | 190.00 | 455.00 | 155.00 | 145.00 | 170.00 | 170.00 | 75.00 |
| October | 190.00 | 440.00 | 155.00 | 145.00 | 165.00 | 165.00 | 75.00 |
| November | 195.00 | 440.00 | 155.00 | 140.00 | 160.00 | 165.00 | 80.00 |
| December | 190.00 | 440.00 | 155.00 | 140.00 | 160.00 | 165.00 | 90.00 |
| Year | 205.00 | 473.00 | 164.00 | 155.00 | 166.00 | 179.00 | 88.00 |

TABLE 151.—*Number of horses and mules received at principal live-stock markets.*

[From reports of stockyards companies.]

| Year and month. | Horses. | Horses and mules. | | |
|---|---|---|---|---|
| | Chicago. | St. Louis (National Stock Yards, Ill.). | Kansas City. | Omaha. |
| 1900 | 99,010 | 144,921 | 103,308 | 59,645 |
| 1901 | 109,353 | 128,880 | 96,657 | 36,391 |
| 1902 | 102,100 | 109,295 | 76,844 | 42,079 |
| 1903 | 100,603 | 128,615 | 67,274 | 52,829 |
| 1904 | 105,949 | 181,341 | 67,562 | 46,845 |
| 1905 | 127,250 | 178,257 | 65,582 | 45,422 |
| 1906 | 126,979 | 166,393 | 69,629 | 42,269 |
| 1807 | 102,055 | 117,379 | 62,341 | 44,020 |
| 1908 | 92,138 | 109,393 | 56,335 | 39,998 |
| 1909 | 91,411 | 123,651 | 67,796 | 31,711 |
| 1910 | 83,439 | 131,887 | 69,628 | 29,734 |
| 1911 | 104,545 | 169,722 | 84,861 | 31,771 |
| 1912 | 92,977 | 161,730 | 73,445 | 32,520 |
| 1913 | 90,615 | 156,692 | 82,110 | 31,580 |
| 1914 | 106,282 | 149,982 | 87,155 | 30,688 |
| 1915. | | | | |
| January | 11,213 | 25,422 | 16,671 | 4,981 |
| February | 12,616 | 30,948 | 11,800 | 4,233 |
| March | 14,930 | 28,434 | 12,820 | 4,420 |
| April | 10,895 | 23,276 | 13,748 | 3,001 |
| May | 13,831 | 23,728 | 11,425 | 2,355 |
| June | 14,978 | 32,388 | 4,917 | 3,498 |
| July | 11,726 | 20,266 | 4,425 | 3,758 |
| August | 14,931 | 15,616 | 3,030 | 2,655 |
| September | 18,004 | 17,298 | 3,990 | 4,081 |
| October | 17,742 | 25,765 | 7,424 | 4,757 |
| October | 14,339 | 17,066 | 6,714 | 3,318 |
| November | 10,048 | 16,972 | 5,189 | 622 |
| Total, 1915 | 165,253 | 277,179 | 102,153 | 41,679 |

## HORSES AND MULES—Continued

TABLE 152 —*Horses and mules: Imports, exports, and prices, 1893–1915.*

| Year ending June 30— | Imports of horses | | | Exports of horses | | | Exports of mules. | | |
|---|---|---|---|---|---|---|---|---|---|
| | Number | Value | Average import price | Number | Value | Average export. price. | Number. | Value. | Average export price. |
| 1893..... | 15,451 | $2,388,267 | $154 57 | 2,967 | $718,607 | $242 20 | 1,634 | $210,278 | $128.69 |
| 1894..... | 6,166 | 1,319,572 | 214 01 | 5,246 | 1,108,995 | 211 40 | 2,063 | 240,961 | 116 80 |
| 1895..... | 13,098 | 1,055,191 | 80 56 | 13,984 | 2,209,298 | 157 99 | 2,515 | 186,452 | 74 14 |
| 1896.... | 9,991 | 662,591 | 66 32 | 25,126 | 3,530,703 | 140 52 | 5,918 | 406,161 | 68.63 |
| 1897.... | 6,998 | 464,808 | 66 42 | 39,532 | 4,769,265 | 120 64 | 7,473 | 545,331 | 72 97 |
| 1898..... | 3,085 | 414,899 | 134 49 | 51,150 | 6,176,569 | 120 75 | 8,098 | 664,789 | 82 09 |
| 1899.... | 3,042 | 551,050 | 181 15 | 45,778 | 5,444,342 | 118 93 | 6,755 | 516,908 | 76 52 |
| 1900..... | 3,102 | 596,592 | 192 32 | 64,722 | 7,612,616 | 117 62 | 43 369 | 3,919,478 | 90 38 |
| 1901..... | 3,785 | 985,738 | 260 43 | 82,250 | 8,873,845 | 107 89 | 34,405 | 3,210,267 | 93 31 |
| 1902..... | 4,832 | 1,577,234 | 326 41 | 103,020 | 10,048,046 | 97 53 | 27,586 | 2,692,298 | 97 60 |
| 1903.... | 4,999 | 1,536,296 | 307 32 | 34,007 | 3,152,159 | 92 69 | 4,294 | 521,725 | 121.47 |
| 1904.... | 4,726 | 1,460,287 | 308 99 | 42,001 | 3,189,100 | 75 93 | 3,658 | 412,971 | 112.90 |
| 1905..... | 5,180 | 1,591,083 | 307 16 | 34,822 | 3,175,259 | 91 19 | 5,826 | 645,464 | 110 79 |
| 1906..... | 6,021 | 1,716,675 | 285 11 | 40,087 | 4,365,981 | 108 91 | 7,167 | 989,639 | 138 08 |
| 1907... | 6,080 | 1,978,105 | 325 35 | 33,882 | 4,359,957 | 131 99 | 6,781 | 850,901 | 125 48 |
| 1908 | 5,487 | 1,604,392 | 292 40 | 19,000 | 2,612,587 | 137 50 | 6,609 | 990,667 | 149 90 |
| 1909 . .. | 7,084 | 2,007,276 | 283 35 | 21,616 | 3,386,617 | 156 67 | 3,432 | 472,017 | 137 53 |
| 1910 ... | 11,620 | 3,296,022 | 283 65 | 28,910 | 4,081,157 | 141 17 | 4,512 | 614,094 | 136 18 |
| 1911.... | 9,593 | 2,692,074 | 280 63 | 25,145 | 3,845,253 | 152 92 | 6,585 | 1,070,051 | 162 50 |
| 1912..... | 6,607 | 1,923,025 | 291 06 | 34,828 | 4,764,815 | 136 81 | 4,901 | 732,095 | 149 30 |
| 1913..... | 10,008 | 2,125,875 | 212 42 | 28,707 | 3,960,102 | 137 95 | 4,744 | 733,795 | 154 68 |
| 1914..... | 33,019 | 2,605,029 | 78 89 | 22,776 | 3,388,819 | 148 79 | 4,853 | 690,974 | 141 51 |
| 1915..... | 12,652 | 977,380 | 77 25 | 289,340 | 64,046,534 | 221 35 | 65,788 | 12,726,143 | 193.44 |

## CATTLE

TABLE 153 —*Cattle (live) Imports, exports, and prices, 1893–1915*

| Year ending June 30— | Imports | | | Exports | | |
|---|---|---|---|---|---|---|
| | Number | Value | Average import price | Number | Value | Average export price |
| 1893. | 3,293 | $45,682 | $13 87 | 287,094 | $26,032,428 | $90 68 |
| 1894. | 1,592 | 18,704 | 11 75 | 359,278 | 33,461,922 | 93 14 |
| 1895. | 149,781 | 765,853 | 5 11 | 331,722 | 30,603,796 | 92 26 |
| 1896. | 217,826 | 1,509,856 | 6 93 | 372,461 | 34,560,672 | 92 79 |
| 1897 | 328,977 | 2,589,857 | 7 87 | 392,190 | 36,357,451 | 92 70 |
| 1898 | 291,589 | 2,913,223 | 9 99 | 439,255 | 37,827,500 | 86 12 |
| 1899. | 199,752 | 2,320,362 | 11 62 | 389,490 | 30,516,833 | 78.35 |
| 1900. | 181,006 | 2,257,694 | 12 47 | 397,286 | 30,635,153 | 77.11 |
| 1901. | 146,022 | 1,931,433 | 13 23 | 459,218 | 37,566,980 | 81.81 |
| 1902. | 96,027 | 1,608,722 | 16 75 | 392,884 | 29,902,212 | 76.11 |
| 1903 | 66,175 | 1,161,548 | 17 55 | 402,178 | 29,848,936 | 74.22 |
| 1904 | 16,056 | 310,737 | 19 35 | 593,409 | 42,256,291 | 71 21 |
| 1905. | 27,855 | 458,572 | 16 46 | 567,806 | 40,598,048 | 71 50 |
| 1906. | 29,019 | 548,430 | 18 90 | 584,239 | 42,081,170 | 72.03 |
| 1907. | 32,402 | 565,122 | 17 44 | 423,051 | 34,577,392 | 81.73 |
| 1908. | 92,356 | 1,507,310 | 16 32 | 349,210 | 29,339,134 | 84.02 |
| 1909. | 139,184 | 1,999,422 | 14 37 | 207,542 | 18,046,976 | 86.96 |
| 1910. | 195,938 | 2,999,824 | 15 37 | 139,430 | 12,200,154 | 87.50 |
| 1911. | 182,923 | 2,953,077 | 16 14 | 150,100 | 13,163,920 | 87.70 |
| 1912. | 318,372 | 4,805,574 | 15 09 | 105,506 | 8,870,075 | 84.07 |
| 1913. | 421,649 | 6,640,668 | 15.75 | 24,714 | 1,177,199 | 47.63 |
| 1914. | 868,368 | 18,696,718 | 21.53 | 18,376 | 647,288 | 35.22 |
| 1915. | 538,167 | 17,513,175 | 32 54 | 5,484 | 702,847 | 128.16 |

## CATTLE—Continued

### TABLE 154.—*Cattle: Number and value on farms in the United States, 1867–1916.*

NOTE.—Figures in *italics* are census returns, figures in roman are estimates of the Department of Agriculture. Estimates of numbers are obtained by applying estimated percentages of increase or decrease to the published numbers of the preceding year, except that a revised base is used for applying percentage estimates whenever new census data are available. It should also be observed that the census of 1910, giving numbers as of Apr. 15, is not strictly comparable with former censuses, which related to numbers June 1.

| Jan. 1— | Milch cows | | | Other cattle | | |
|---|---|---|---|---|---|---|
| | Number | Price per head Jan. 1 | Farm value Jan. 1 | Number | Price per head Jan. 1 | Farm value Jan. 1 |
| 1867 | 8,349,000 | $28.74 | $239,947,000 | 11,731,000 | $15.79 | $185,254,000 |
| 1868 | 8,692,000 | 26.56 | 230,817,000 | 11,942,000 | 15.06 | 179,888,000 |
| 1869 | 9,248,000 | 29.15 | 269,610,000 | 12,185,000 | 18.73 | 228,183,000 |
| 1870 | 10,096,000 | 32.70 | 330,175,000 | 15,388,000 | 18.87 | 290,401,000 |
| *1870, census June 1* | *8,935,332* | | | *13,566,005* | | . |
| 1871 | 10,023,000 | 33.89 | 339,701,000 | 16,212,000 | 20.78 | 336,860,000 |
| 1872 | 10,304,000 | 29.45 | 303,438,000 | 16,390,000 | 18.12 | 296,932,000 |
| 1873 | 10,576,000 | 26.72 | 282,559,000 | 16,414,000 | 18.06 | 296,448,000 |
| 1874 | 10,705,000 | 25.63 | 274,326,000 | 16,218,000 | 17.55 | 284,706,000 |
| 1875 | 10,907,000 | 25.74 | 280,701,000 | 16,313,000 | 16.91 | 275,872,000 |
| 1876 | 11,085,000 | 25.61 | 283,879,000 | 16,785,000 | 17.00 | 285,387,000 |
| 1877 | 11,261,000 | 25.47 | 286,778,000 | 17,956,000 | 15.99 | 287,156,000 |
| 1878 | 11,300,000 | 25.74 | 290,898,000 | 19,223,000 | 16.72 | 321,346,000 |
| 1879 | 11,826,000 | 21.71 | 256,721,000 | 21,408,000 | 15.38 | 329,254,000 |
| 1880 | 12,027,000 | 23.27 | 279,899,000 | 21,231,000 | 16.10 | 341,761,000 |
| *1880, census June 1* | *12,443,120* | | | *22,488,550* | | |
| 1881 | 12,369,000 | 23.95 | 296,277,000 | 20,939,000 | 17.33 | 362,862,000 |
| 1882 | 12,612,000 | 25.89 | 326,489,000 | 23,280,000 | 19.89 | 463,070,000 |
| 1883 | 13,126,000 | 30.21 | 396,575,000 | 28,046,000 | 21.81 | 611,549,000 |
| 1884 | 13,501,000 | 31.37 | 423,487,000 | 29,046,000 | 23.52 | 683,229,000 |
| 1885 | 13,905,000 | 29.70 | 412,903,000 | 29,867,000 | 23.25 | 694,383,000 |
| 1886 | 14,235,000 | 27.40 | 389,986,000 | 31,275,000 | 21.17 | 661,956,000 |
| 1887 | 14,522,000 | 26.08 | 378,790,000 | 33,512,000 | 19.79 | 663,138,000 |
| 1888 | 14,856,000 | 24.65 | 366,252,000 | 34,378,000 | 17.79 | 611,751,000 |
| 1889 | 15,299,000 | 23.94 | 366,226,000 | 35,032,000 | 17.05 | 597,237,000 |
| 1890 | 15,953,000 | 22.14 | 353,152,000 | 36,849,000 | 15.21 | 560,625,000 |
| *1890, census June 1* | *16,511,950* | | | *33,734,128* | | . |
| 1891 | 16,020,000 | 21.62 | 346,398,000 | 36,876,000 | 14.76 | 544,128,000 |
| 1892 | 16,416,000 | 21.40 | 351,378,000 | 37,651,000 | 15.16 | 570,749,000 |
| 1893 | 16,424,000 | 21.75 | 357,300,000 | 35,954,000 | 15.24 | 547,882,000 |
| 1894 | 16,487,000 | 21.77 | 358,999,000 | 36,608,000 | 14.66 | 536,790,000 |
| 1895 | 16,505,000 | 21.97 | 362,602,000 | 34,364,000 | 14.06 | 482,999,000 |
| 1896 | 16,138,000 | 22.55 | 363,956,000 | 32,085,000 | 15.86 | 508,928,000 |
| 1897 | 15,942,000 | 23.16 | 369,240,000 | 30,508,000 | 16.65 | 507,929,000 |
| 1898 | 15,841,000 | 27.45 | 434,814,000 | 29,264,000 | 20.92 | 612,297,000 |
| 1899 | 15,990,000 | 29.66 | 474,234,000 | 27,994,000 | 22.79 | 637,931,000 |
| 1900 | 16,292,000 | 31.60 | 514,812,000 | 27,610,000 | 24.97 | 689,486,000 |
| *1900, census June 1* | *17,135,633* | | | *50,083,777* | | ....... |
| 1901 [1] | 16,834,000 | 30.00 | 505,093,000 | 45,500,000 | 19.93 | 906,644,000 |
| 1902 | 16,697,000 | 29.23 | 488,130,000 | 44,728,000 | 18.76 | 839,126,000 |
| 1903 | 17,105,000 | 30.21 | 516,712,000 | 44,659,000 | 18.45 | 824,055,000 |
| 1904 | 17,420,000 | 29.21 | 508,841,000 | 43,629,000 | 16.32 | 712,178,000 |
| 1905 | 17,572,000 | 27.44 | 482,272,000 | 43,669,000 | 15.15 | 661,571,000 |
| 1906 | 19,794,000 | 29.44 | 582,789,000 | 47,068,000 | 15.85 | 746,172,000 |
| 1907 | 20,968,000 | 31.00 | 645,497,000 | 51,566,000 | 17.10 | 881,557,000 |
| 1908 | 21,194,000 | 30.67 | 650,057,000 | 50,073,000 | 16.89 | 845,938,000 |
| 1909 | 21,720,000 | 32.36 | 702,945,000 | 49,379,000 | 17.49 | 863,754,000 |
| 1910 | 21,801,000 | | | 47,279,000 | . . . | . . . |
| *1910, census Apr. 15* | *20,625,432* | 35.29 | 727,802,000 | *41,178,434* | 19.07 | 785,261,000 |
| 1911 [1] | 20,823,000 | 39.97 | 832,209,000 | 39,679,000 | 20.54 | 815,184,000 |
| 1912 | 20,699,000 | 39.39 | 815,414,000 | 37,260,000 | 21.20 | 790,064,000 |
| 1913 | 20,497,000 | 45.02 | 922,783,000 | 36,030,000 | 26.36 | 949,645,000 |
| 1914 | 20,737,000 | 53.94 | 1,118,487,000 | 35,855,000 | 31.13 | 1,116,333,000 |
| 1915 | 21,262,000 | 55.33 | 1,176,338,000 | 37,067,000 | 33.38 | 1,237,376,000 |
| 1916 | 21,988,000 | 53.90 | 1,185,119,000 | 39,453,000 | 33.49 | 1,321,126,000 |

[1] Estimates of numbers revised, based on census data.

## CATTLE—Continued.

TABLE 155.—*Cattle: Number and value on farms Jan. 1, 1915 and 1916, by States.*

| State. | Milch cows. | | | | | | Other cattle. | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Number (thousands) Jan. 1— | | Average price per head Jan. 1— | | Farm value (thousands of dollars) Jan. 1— | | Number (thousands) Jan. 1— | | Average price per head Jan. 1— | | Farm value (thousands of dollars) Jan. 1— | |
| | 1916 | 1915 | 1916 | 1915 | 1916 | 1915 | 1916 | 1915 | 1916 | 1915 | 1916 | 1915 |
| Maine | 159 | 157 | $50.00 | $54.00 | $7,950 | $8,478 | 104 | 101 | $24.60 | $26.10 | $2,558 | $2,636 |
| New Hampshire | 97 | 95 | 60.00 | 60.00 | 5,820 | 5,700 | 65 | 64 | 28.50 | 28.00 | 1,852 | 1,792 |
| Vermont | 273 | 268 | 54.00 | 52.00 | 14,742 | 13,936 | 170 | 167 | 23.30 | 23.10 | 3,961 | 3,858 |
| Massachusetts | 155 | 157 | 68.00 | 66.00 | 10,540 | 10,362 | 85 | 83 | 25.40 | 25.10 | 2,159 | 2,083 |
| Rhode Island | 22 | 23 | 77.00 | 71.00 | 1,694 | 1,633 | 10 | 11 | 28.30 | 26.80 | 283 | 295 |
| Connecticut | 119 | 118 | 68.30 | 66.70 | 8,128 | 7,871 | 72 | 71 | 29.70 | 29.80 | 2,138 | 2,116 |
| New York | 1,539 | 1,509 | 57.20 | 61.00 | 88,031 | 92,049 | 939 | 894 | 26.90 | 28.20 | 25,259 | 25,211 |
| New Jersey | 152 | 146 | 71.00 | 68.00 | 10,792 | 9,928 | 73 | 70 | 32.50 | 31.50 | 2,372 | 2,205 |
| Pennsylvania | 971 | 943 | 56.50 | 59.50 | 54,862 | 56,108 | 657 | 638 | 27.10 | 29.30 | 17,805 | 18,693 |
| Delaware | 42 | 41 | 53.00 | 56.50 | 2,226 | 2,316 | 21 | 20 | 28.00 | 31.20 | 588 | 624 |
| Maryland | 181 | 177 | 52.00 | 54.00 | 9,412 | 9,558 | 125 | 121 | 28.80 | 29.50 | 3,600 | 3,570 |
| Virginia | 359 | 349 | 41.50 | 43.50 | 14,898 | 15,182 | 472 | 450 | 28.20 | 28.60 | 13,310 | 12,870 |
| West Virginia | 241 | 234 | 50.00 | 51.00 | 12,050 | 11,934 | 362 | 338 | 36.30 | 36.30 | 13,141 | 12,269 |
| North Carolina | 321 | 315 | 34.00 | 36.50 | 10,914 | 11,498 | 387 | 369 | 16.80 | 17.00 | 6,502 | 6,273 |
| South Carolina | 189 | 185 | 34.50 | 33.00 | 6,520 | 6,105 | 215 | 211 | 15.40 | 14.60 | 3,311 | 3,081 |
| Georgia | 414 | 406 | 31.50 | 32.00 | 13,041 | 12,992 | 686 | 660 | 13.50 | 12.80 | 9,261 | 8,448 |
| Florida | 136 | 133 | 40.00 | 42.50 | 5,440 | 5,652 | 772 | 735 | 14.90 | 14.50 | 11,503 | 10,658 |
| Ohio | 922 | 895 | 56.00 | 60.00 | 51,632 | 53,700 | 872 | 838 | 33.80 | 34.60 | 29,474 | 28,995 |
| Indiana | 672 | 646 | 54.50 | 55 00 | 36,624 | 35,530 | 728 | 693 | 36.80 | 35.20 | 26,790 | 24,394 |
| Illinois | 1,047 | 1,007 | 60.20 | 59.50 | 63,029 | 59,916 | 1,239 | 1,180 | 38.50 | 37.80 | 47,702 | 44,604 |
| Michigan | 847 | 814 | 56.20 | 60.50 | 47,601 | 49,247 | 735 | 707 | 27.30 | 29.80 | 20,066 | 21,069 |
| Wisconsin | 1,675 | 1,626 | 55.00 | 59.50 | 92,125 | 96,747 | 1,313 | 1,216 | 25.20 | 27.70 | 33,088 | 33,683 |
| Minnesota | 1,210 | 1,186 | 51.00 | 53.50 | 61,710 | 63,451 | 1,232 | 1,208 | 22.40 | 24.70 | 27,597 | 29,838 |
| Iowa | 1,391 | 1,377 | 58.50 | 57.00 | 81,374 | 78,489 | 2,737 | 2,683 | 38.30 | 37.50 | 104,827 | 100,612 |
| Missouri | 837 | 797 | 54.40 | 54.50 | 45,533 | 43,436 | 1,555 | 1,414 | 38.90 | 37.90 | 60,490 | 53,591 |
| North Dakota | 373 | 339 | 57.00 | 61.50 | 21,261 | 20,848 | 577 | 515 | 35.00 | 36.00 | 20,195 | 18,540 |
| South Dakota | 485 | 453 | 59.00 | 59.50 | 28,615 | 26,954 | 1,064 | 967 | 38.40 | 39.50 | 40,858 | 38,196 |
| Nebraska | 650 | 625 | 60.00 | 62.50 | 39,000 | 39,062 | 2,237 | 2,034 | 40.50 | 40.80 | 90,598 | 82,987 |
| Kansas | 762 | 726 | 60 60 | 63.50 | 46,177 | 46,101 | 1,945 | 1,768 | 41.70 | 42.50 | 81,106 | 75,140 |
| Kentucky | 406 | 390 | 44.80 | 45.50 | 18,189 | 17,745 | 570 | 543 | 30.80 | 30.40 | 17,556 | 16,507 |
| Tennessee | 366 | 355 | 39.50 | 41.00 | 14,457 | 14,555 | 518 | 503 | 22.60 | 22.40 | 11,707 | 11,267 |
| Alabama | 396 | 384 | 32.00 | 31.50 | 12,672 | 12,096 | 534 | 504 | 13.00 | 12.60 | 6,942 | 6,350 |
| Mississippi | 447 | 434 | 33.50 | 35.00 | 14,974 | 15,190 | 535 | 514 | 14.10 | 14.30 | 7,544 | 7,350 |
| Louisiana | 271 | 268 | 37.00 | 36.00 | 10,027 | 9,648 | 475 | 448 | 16.80 | 16.40 | 7,980 | 7,347 |
| Texas | 1,119 | 1,086 | 51.00 | 47.50 | 57,069 | 51,585 | 5,428 | 5,121 | 33.10 | 31.70 | 179,667 | 162,336 |
| Oklahoma | 519 | 494 | 55.00 | 52.00 | 28,545 | 25,688 | 1,186 | 1,119 | 37.90 | 35.40 | 44,949 | 39,613 |
| Arkansas | 402 | 387 | 38.00 | 37.00 | 15,276 | 14,319 | 523 | 484 | 17.00 | 17.20 | 8,891 | 8,325 |
| Montana | 129 | 114 | 77.50 | 75.00 | 9,998 | 8,550 | 894 | 791 | 50.40 | 49.00 | 45,058 | 38,759 |
| Wyoming | 50 | 46 | 80.50 | 78.00 | 4,025 | 3,588 | 703 | 628 | 52.70 | 53.30 | 37,048 | 33,472 |
| Colorado | 219 | 205 | 72.00 | 68.00 | 15,768 | 13,940 | 1,096 | 996 | 44.80 | 43.70 | 49,101 | 43,525 |
| New Mexico | 76 | 68 | 67.00 | 61.50 | 5,092 | 4,182 | 1,090 | 991 | 40.10 | 35.50 | 43,709 | 35,180 |
| Arizona | 53 | 44 | 78.00 | 74.00 | 4,134 | 3,256 | 838 | 791 | 34.20 | 34.50 | 28,660 | 27,290 |
| Utah | 96 | 92 | 62.00 | 62.00 | 5,952 | 5,704 | 408 | 381 | 35.80 | 35.80 | 14,606 | 13,640 |
| Nevada | 25 | 24 | 76.00 | 77.50 | 1,900 | 1,860 | 472 | 450 | 39.70 | 40.70 | 18,738 | 18,315 |
| Idaho | 126 | 120 | 66.00 | 72.00 | 8,316 | 8,640 | 406 | 379 | 38.60 | 41.80 | 15,672 | 15,842 |
| Washington | 263 | 253 | 60.50 | 74.00 | 15,912 | 18,722 | 221 | 215 | 30.30 | 34.90 | 6,696 | 7,504 |
| Oregon | 216 | 210 | 55.00 | 63.50 | 11,880 | 13,335 | 553 | 503 | 32.20 | 36.30 | 17,807 | 18,259 |
| California | 568 | 541 | 69.00 | 72.00 | 39,192 | 38,952 | 1,554 | 1,480 | 36.30 | 39.30 | 56,410 | 58,164 |
| United States | 21,988 | 21,262 | 53.90 | 55.33 | 1,185,119 | 1,176,338 | 39,453 | 37,067 | 33.49 | 33.38 | 1,321,135 | 1,237,376 |

## CATTLE—Continued.

TABLE 156.—*Cattle: Wholesale price per 100 pounds, 1900–1915.*

| Date. | Chicago. | | Cincinnati. | | St. Louis. | | Kansas City. | | Omaha. | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Inferior to prime. | | Fair to medium. | | Good to choice native steers. | | Common to prime. | | Native beeves. | |
| | Low. | High. | Low. | High. | Low. | High. | Low. | High. | Low. | High. |
| 1900 | $1.75 | $6.60 | $3.00 | $4.70 | $4.00 | $6.50 | $3.90 | $6.50 | $3.50 | $7.50 |
| 1901 | 2.10 | 7.00 | 2.90 | 5.05 | 4.75 | 8.25 | 4.00 | 7.00 | 3.50 | 7.25 |
| 1902 | 1.90 | 14.50 | 3.00 | 5.40 | 5.15 | 8.75 | 4.10 | 8.75 | 3.00 | 8.15 |
| 1903 | 1.50 | 8.35 | 2.25 | 4.40 | 5.00 | 6.00 | 3.75 | 6.00 | 2.65 | 5.75 |
| 1904 | 1.70 | 7.65 | 2.25 | 4.25 | 4.90 | 6.60 | 4.25 | 7.00 | 2.75 | 6.35 |
| 1905 | 1.85 | 7.00 | 2.35 | 4.75 | 5.15 | 7.10 | 4.00 | 7.05 | 3.05 | 6.50 |
| 1906 | 1.75 | 7.90 | 2.35 | 4.50 | 5.45 | 7.00 | 4.10 | 7.50 | 2.90 | 6.85 |
| 1907 | 2.00 | 8.00 | 4.10 | 6.00 | 5.35 | 7.35 | 3.90 | 8.25 | 3.10 | 7.30 |
| 1908 | 2.00 | 8.40 | 2.65 | 5.50 | 5.50 | 8.25 | 3.50 | 8.25 | 2.25 | 8.10 |
| 1909 | 2.90 | 9.50 | 3.00 | 5.50 | 5.70 | 10.50 | 3.70 | 10.50 | 3.75 | 8.00 |
| 1910 | 2.90 | 8.85 | 3.00 | 6.50 | 6.35 | 8.50 | 3.60 | 8.60 | 3.75 | 8.25 |
| 1911 | 2.50 | 9.35 | 3.25 | 5.35 | 6.25 | 9.40 | 4.25 | 12.55 | 3.50 | 8.00 |
| 1912 | 1.75 | 11.25 | 4.05 | 6.75 | 7.35 | 11.00 | 4.60 | 12.40 | 3.50 | 10.35 |
| 1913 | 3.00 | 10.25 | 4.50 | 7.65 | 8.00 | 10.00 | 4.50 | 10.00 | 3.00 | 9.60 |
| 1914 | 4.85 | 11.25 | 4.65 | 7.25 | 8.00 | 9.50 | 4.50 | 11.35 | 6.00 | 10.75 |
| 1915. | | | | | | | | | | |
| January | 4.60 | 9.65 | 4.85 | 6.25 | ........ | ........ | 6.00 | 9.75 | 8.50 | 8.50 |
| February | 4.25 | 9.25 | 5.00 | 6.65 | ........ | ........ | 6.00 | 8.85 | 8.30 | 8.30 |
| March | 4.50 | 9.15 | 5.10 | 6.50 | ........ | ........ | 6.00 | 8.65 | 8.45 | 8.45 |
| April | 4.65 | 8.90 | 5.00 | 6.50 | ........ | ........ | 6.00 | 9.00 | 8.50 | 8.50 |
| May | 4.90 | 9.65 | 5.25 | 7.00 | ........ | ........ | 6.00 | 9.25 | 9.00 | 9.00 |
| June | 4.75 | 9.95 | 5.35 | 7.00 | ........ | ........ | 6.00 | 9.35 | 9.35 | 9.35 |
| July | 4.50 | 10.40 | 5.25 | 7.00 | ........ | ........ | 6.60 | 10.10 | 10.10 | 10.10 |
| August | 4.50 | 10.50 | 4.60 | 6.65 | ........ | ........ | 6.60 | 10.00 | 9.85 | 9.85 |
| September | 4.25 | 10.50 | 4.15 | 6.00 | ........ | ........ | 6.60 | 10.10 | 9.85 | 9.85 |
| October | 4.00 | 10.60 | 4.00 | 5.80 | ........ | ........ | 6.60 | 10.25 | 9.90 | 9.90 |
| November | 4.50 | 10.55 | 4.50 | 5.75 | ........ | ........ | 6.00 | 10.25 | 10.00 | 10.00 |
| December | 4.50 | 13.60 | 4.50 | 6.00 | ........ | ........ | 5.50 | 10.35 | 10.00 | 10.00 |
| Year | 4.00 | 13.60 | 4.00 | 7.00 | ........ | ........ | 5.50 | 10.35 | 8.30 | 10.10 |

## BUTTER AND EGGS.

TABLE 157.—*Butter: Wholesale price per pound, 1900–1915.*

| Date. | Elgin. | | Chicago. | | | | Cincinnati. | | Milwaukee. | | New York. | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Creamery, extra. | | Creamery, extra. | | Dairies, firsts to extras. | | Creamery, extra. | | Creamery, fancy.[1] | | Creamery, extra. | |
| | Low. | High. | Low. | High. | Low. | High. | Low. | High. | Low. | High. | Low. | High. |
| | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* |
| 1900 | 18 | 29 | 15½ | 29 | 14½ | 25 | 16 | 27 | 19 | 29½ | 17½ | 30 |
| 1901 | 18½ | 24½ | 15 | 24½ | 14 | 20 | 17 | 24 | 18½ | 25 | 18 | 25½ |
| 1902 | 19 | 30 | 16 | 31 | 15½ | 29 | 17 | 27 | 19½ | 30½ | 19 | 33 |
| 1903 | 18½ | 29 | 16 | 28½ | 15 | 25 | 15½ | 27 | 18½ | 28½ | 19 | 29½ |
| 1904 | 17 | 28 | 15 | 28 | 12½ | 24 | 17 | 28 | 17 | 27 | 17½ | 28 |
| 1905 | 19½ | 34 | 18 | 34 | 16 | 30 | 19 | 34 | 19½ | 34 | 17½ | 35½ |
| 1906 | 19 | 31½ | 16½ | 31 | 15 | 27 | 19 | 32½ | 19 | 31½ | 19½ | 33 |
| 1907 | 23 | 33 | 18 | 32½ | 18 | 30 | 23 | 34 | 23 | 33 | 23½ | 35 |
| 1908 | 21 | 33 | 19 | 33½ | 18 | 29 | 21 | 36 | 21 | 33½ | 21½ | 34 |
| 1909 | 24 | 36 | 22 | 35 | 20 | 30 | 26 | 38½ | 15 | 35 | 25 | 37 |
| 1910 | 27 | 36 | 24 | 36 | 23 | 30 | 29½ | 38½ | 18 | 36 | 27½ | 35 |
| 1911 | 21 | 36 | 18 | 37 | 15 | 33 | 23½ | 38½ | 21 | 36 | 19½ | 39 |
| 1912 | 25 | 40 | 24 | 40 | 22 | 34 | 27½ | 42½ | 25 | 40 | 26 | 41 |
| 1913 | 26 | 35½ | 24 | 36 | 24 | 33 | 30 | 40 | 26 | 35½ | 26 | 38 |
| 1914 | 23½ | 35½ | 24 | 35½ | 20 | 33½ | 27½ | 39½ | 23½ | 35½ | 24½ | 50 |

[1] Changed from creamery extra (tubs) to creamery (tubs). Grade apparently unchanged, only classification different. Price apparently not affected.

## BUTTER AND EGGS—Continued.

TABLE 157.—*Butter: Wholesale price per pound, 1900-1915*—Continued.

| Date. | Elgin. | | Chicago. | | | | Cincinnati. | | Milwaukee. | | New York. | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Creamery, extra. | | Creamery, extra. | | Dairies, firsts to extras. | | Creamery, extra. | | Creamery, fancy. | | Creamery, extra. | |
| | Low. | High. | Low. | High. | Low. | High. | Low. | High. | Low. | High. | Low. | High. |
| 1915. | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* |
| January | 30 | 34 | 30 | 34 | 27½ | 32 | 34 | 38 | 30 | 34 | 32 | 36 |
| February | 29 | 32 | 29 | 32 | 26 | 30 | 34 | 36 | 30½ | 32 | 24 | 30 |
| March | 28½ | 29 | 28 | 29½ | 22 | 28 | 32 | 34½ | 28 | 30 | 28½ | 32 |
| April | 28 | 31½ | 27½ | 31 | 22 | 30 | 32 | 35½ | 28 | 31½ | 29 | 32 |
| May | 25½ | 28 | 26 | 28½ | 21 | 27 | 29½ | 32½ | 25½ | 28 | 27½ | 31 |
| June | 26½ | 28 | 27 | 27½ | 23 | 27 | 30½ | 32 | 26½ | 28½ | 28 | 28½ |
| July | 24½ | 27 | 25 | 27 | 22 | 26 | 28½ | 31 | 25 | 26½ | 26 | 28½ |
| August | 24 | 25 | 24 | 25 | 21 | 25 | 28 | 29 | 24 | 24½ | 25 | 26½ |
| September | 21½ | 26 | 24 | 26½ | 21 | 24 | 28 | 30 | 24 | 26 | 25½ | 28½ |
| October | 26 | 28 | 26½ | 28 | 22 | 27 | 30 | 32 | 26 | 28 | 28 | 29 |
| November | 28 | 33 | 28 | 32 | 23 | 30 | 32 | 37 | 28 | 33 | 28½ | 34 |
| December | 33 | 34 | 32 | 34 | 25 | 30 | 37 | 38 | 33 | 34 | 33 | 36½ |
| Year | 24 | 34 | 24 | 34 | 21 | 32 | 28 | 38 | 24 | 34 | 24 | 36½ |

TABLE 158.—*Butter: International trade, calendar years 1912-1914.*

[Butter includes all butter made from milk, melted and renovated butter, but does not include margarine cocoa butter, or ghee. See "General note," p. 417.]

### EXPORTS.

[000 omitted.]

| Country. | 1912 | 1913 | 1914 (prelim.). | Country. | 1912 | 1913 | 1914 (prelim.). |
|---|---|---|---|---|---|---|---|
| | *Pounds.* | *Pounds.* | *Pounds.* | | *Pounds.* | *Pounds.* | *Pounds.* |
| Argentina | 8,106 | 8,342 | 7,676 | Netherlands | 86,307 | 81,702 | .......... |
| Australia | 67,183 | 76,334 | 56,163 | New Zealand | 42,349 | 41,693 | .......... |
| Austria-Hungary | 3,853 | 3,039 | .......... | Norway | 3,475 | 2,346 | 2,152 |
| Belgium | 2,625 | 2,147 | .......... | Russia | 160,771 | 172,003 | 116,139 |
| Canada | 884 | 1,220 | 2,500 | Sweden | 46,818 | 43,330 | .......... |
| Denmark | 187,755 | 200,670 | .......... | United States | 5,105 | 3,115 | 3,688 |
| Finland | 26,474 | 27,867 | .......... | Other countries | 3,866 | 4,033 | .......... |
| France | 37,572 | 38,360 | .......... | | | | |
| Germany | 482 | 602 | .......... | Total | 692,468 | 712,837 | .......... |
| Italy | 8,843 | 6,034 | 9,310 | | | | |

### IMPORTS.

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Austria-Hungary | 10,265 | 14,616 | .......... | Germany | 122,472 | 119,576 | .......... |
| Belgium | 15,225 | 14,522 | .......... | Netherlands | 4,636 | 5,529 | .......... |
| Brazil | 4,208 | 4,336 | 2,364 | Russia | 2,754 | 3,382 | 2,095 |
| British South Africa | 4,946 | 3,910 | 3,924 | Sweden | 273 | 432 | .......... |
| Canada | 7,177 | 7,886 | 7,250 | Switzerland | 11,930 | 11,155 | .......... |
| Denmark | 5,966 | 6,242 | .......... | United Kingdom | 435,247 | 451,736 | 436,019 |
| Dutch East Indies | 4,486 | 4,550 | .......... | Other countries | 30,308 | 29,737 | .......... |
| Egypt | 2,197 | 1,958 | 1,945 | | | | |
| Finland | 3,388 | 3,333 | .......... | Total | 679,657 | 695,934 | .......... |
| France | 14,179 | 13,034 | .......... | | | | |

## BUTTER AND EGGS—Continued.

TABLE 159.—*Butter: Average price received by farmers on first of each month, by States, 1915.*

| State | Butter, cents per pound. | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | January. | February. | March. | April. | May. | June. | July. | August. | September. | October. | November. | December. |
| Maine | 31 | 31 | 30 | 31 | 30 | 30 | 30 | 30 | 30 | 30 | 32 | 32 |
| New Hampshire | 34 | 34 | 32 | 33 | 32 | 30 | 32 | 33 | 31 | 32 | 33 | 34 |
| Vermont | 35 | 33 | 34 | 32 | 33 | 31 | 31 | 30 | 30 | 31 | 32 | 32 |
| Massachusetts | 36 | 37 | 36 | 33 | 33 | 33 | 34 | 35 | 34 | 35 | 34 | 34 |
| Rhode Island | 36 | 37 | 36 | 36 | 35 | 34 | 34 | 40 | 33 | 32 | 35 | 35 |
| Connecticut | 36 | 34 | 36 | 35 | 34 | 34 | 34 | 34 | 34 | 36 | 34 | 35 |
| New York | 35 | 34 | 33 | 31 | 30 | 30 | 29 | 29 | 29 | 29 | 31 | 32 |
| New Jersey | 37 | 36 | 35 | 34 | 35 | 32 | 34 | 33 | 33 | 33 | 35 | 34 |
| Pennsylvania | 35 | 33 | 32 | 29 | 30 | 28 | 27 | 26 | 28 | 30 | 31 | 32 |
| Delaware | 35 | 33 | 32 | 30 | 32 | 30 | 25 | 28 | 30 | 30 | 30 | 33 |
| Maryland | 30 | 29 | 29 | 29 | 29 | 27 | 26 | 27 | 27 | 26 | 28 | 29 |
| Virginia | 27 | 27 | 27 | 26 | 26 | 25 | 24 | 23 | 24 | 25 | 25 | 26 |
| West Virginia | 29 | 28 | 26 | 27 | 27 | 24 | 22 | 24 | 25 | 24 | 26 | 26 |
| North Carolina | 24 | 24 | 24 | 24 | 24 | 24 | 23 | 23 | 23 | 24 | 24 | 25 |
| South Carolina | 26 | 27 | 26 | 26 | 25 | 26 | 25 | 25 | 26 | 26 | 27 | 26 |
| Georgia | 25 | 25 | 23 | 25 | 24 | 33 | 24 | 24 | 24 | 24 | 24 | 26 |
| Florida | 36 | 35 | 35 | 34 | 34 | 33 | 33 | 32 | 33 | 32 | 35 | 33 |
| Ohio | 29 | 28 | 26 | 26 | 26 | 24 | 23 | 23 | 24 | 26 | 26 | 28 |
| Indiana | 26 | 25 | 24 | 24 | 24 | 23 | 22 | 22 | 23 | 23 | 23 | 25 |
| Illinois | 28 | 27 | 26 | 25 | 25 | 25 | 24 | 24 | 24 | 24 | 26 | 28 |
| Michigan | 30 | 29 | 28 | 26 | 26 | 24 | 23 | 23 | 24 | 24 | 26 | 27 |
| Wisconsin | 31 | 31 | 30 | 28 | 29 | 27 | 27 | 27 | 25 | 26 | 28 | 30 |
| Minnesota | 31 | 31 | 28 | 26 | 27 | 26 | 25 | 26 | 25 | 26 | 27 | 29 |
| Iowa | 29 | 29 | 28 | 26 | 26 | 25 | 25 | 24 | 25 | 25 | 26 | 27 |
| Missouri | 24 | 24 | 23 | 23 | 22 | 21 | 21 | 21 | 21 | 22 | 23 | 24 |
| North Dakota | 28 | 27 | 25 | 23 | 22 | 23 | 22 | 22 | 23 | 24 | 25 | 27 |
| South Dakota | 28 | 28 | 26 | 23 | 24 | 24 | 23 | 24 | 23 | 24 | 25 | 28 |
| Nebraska | 26 | 25 | 23 | 22 | 21 | 21 | 21 | 22 | 21 | 22 | 24 | 26 |
| Kansas | 27 | 26 | 24 | 22 | 23 | 22 | 22 | 22 | 23 | 24 | 25 | 26 |
| Kentucky | 22 | 22 | 22 | 21 | 22 | 19 | 18 | 19 | 19 | 20 | 22 | 22 |
| Tennessee | 21 | 21 | 20 | 21 | 20 | 19 | 19 | 18 | 18 | 19 | 20 | 22 |
| Alabama | 23 | 22 | 22 | 21 | 22 | 22 | 21 | 20 | 21 | 22 | 21 | 23 |
| Mississippi | 24 | 23 | 22 | 22 | 23 | 23 | 23 | 22 | 22 | 22 | 23 | 23 |
| Louisiana | 29 | 29 | 29 | 27 | 28 | 28 | 29 | 28 | 28 | 29 | 29 | 29 |
| Texas | 24 | 22 | 22 | 22 | 21 | 21 | 21 | 21 | 22 | 22 | 24 | 24 |
| Oklahoma | 24 | 24 | 22 | 22 | 21 | 22 | 21 | 21 | 21 | 23 | 25 | 26 |
| Arkansas | 24 | 24 | 23 | 23 | 23 | 22 | 23 | 22 | 22 | 23 | 25 | 25 |
| Montana | 35 | 34 | 34 | 32 | 30 | 29 | 27 | 27 | 25 | 29 | 31 | 34 |
| Wyoming | 33 | 33 | 32 | 30 | 27 | 26 | 29 | 28 | 28 | 30 | 30 | 33 |
| Colorado | 32 | 31 | 28 | 27 | 27 | 26 | 25 | 24 | 27 | 26 | 29 | 29 |
| New Mexico | 36 | 35 | 36 | 32 | 32 | 32 | 31 | 32 | 29 | 31 | 33 | 33 |
| Arizona | 36 | 37 | 37 | 30 | 32 | 35 | 30 | 36 | 35 | 35 | 37 | 37 |
| Utah | 33 | 29 | 27 | 30 | 26 | 27 | 26 | 25 | 27 | 28 | 30 | 30 |
| Nevada | 35 | 37 | 36 | 35 | 29 | 29 | 31 | 32 | 32 | 34 | 34 | 36 |
| Idaho | 32 | 31 | 26 | 26 | 27 | 25 | 22 | 25 | 27 | 30 | 29 | 32 |
| Washington | 35 | 33 | 31 | 31 | 26 | 26 | 27 | 29 | 29 | 32 | 32 | 33 |
| Oregon | 32 | 31 | 31 | 30 | 29 | 28 | 27 | 27 | 28 | 29 | 31 | 33 |
| California | 33 | 30 | 30 | 27 | 26 | 26 | 27 | 29 | 29 | 30 | 30 | 31 |
| United States | 28.7 | 27.9 | 26.8 | 25.8 | 25.7 | 24.8 | 24.2 | 24.2 | 24.5 | 25.3 | 26.4 | 27.6 |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| United States | 28.7 | 27.9 | 26.8 | 25.8 | 25.7 | 24.8 | 24.2 | 24.2 | 24.5 | 25.3 | 26.4 | 27.6 |
| North Atlantic | 34.8 | 33.4 | 32.7 | 30.7 | 30.6 | 29.6 | 29.0 | 28.6 | 29.2 | 30.1 | 31.5 | 32.2 |
| South Atlantic | 26.9 | 26.6 | 25.8 | 26.1 | 25.8 | 26.4 | 23.8 | 24.1 | 24.7 | 24.8 | 25.5 | 26.3 |
| N. Central E. Miss. R | 28.8 | 28.0 | 26.7 | 25.8 | 25.9 | 24.5 | 23.6 | 23.6 | 24.0 | 24.7 | 25.8 | 27.6 |
| N. Central W. Miss. R | 27.6 | 27.2 | 25.5 | 23.9 | 24.0 | 23.3 | 23.0 | 23.1 | 23.2 | 23.9 | 25.1 | 26.6 |
| South Central | 23.3 | 22.5 | 22.0 | 21.8 | 21.7 | 21.1 | 20.9 | 20.5 | 20.9 | 21.6 | 23.0 | 23.6 |
| Far Western | 33.1 | 31.1 | 30.1 | 28.7 | 26.9 | 26.5 | 26.6 | 27.7 | 28.3 | 29.6 | 30.4 | 31.7 |

## BUTTER AND EGGS—Continued.

TABLE 160.—*Eggs: Average price received by farmers on first of each month, by States, 1915.*

| State. | Eggs, cents per dozen. | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | January. | February. | March. | April. | May. | June. | July. | August. | September. | October. | November. | December. |
| Maine | 41 | 32 | 27 | 19 | 21 | 22 | 22 | 24 | 27 | 32 | 38 | 44 |
| New Hampshire | 41 | 32 | 28 | 20 | 24 | 25 | 25 | 26 | 31 | 32 | 41 | 46 |
| Vermont | 40 | 33 | 28 | 19 | 19 | 20 | 21 | 24 | 25 | 30 | 39 | 43 |
| Massachusetts | 48 | 39 | 32 | 25 | 27 | 26 | 29 | 30 | 37 | 42 | 46 | 53 |
| Rhode Island | 45 | 38 | 30 | 20 | 23 | 24 | 27 | 28 | 33 | 40 | 48 | 53 |
| Connecticut | 50 | 38 | 31 | 21 | 21 | 24 | 25 | 30 | 32 | 37 | 44 | 49 |
| New York | 42 | 35 | 28 | 20 | 21 | 21 | 22 | 24 | 27 | 31 | 39 | 43 |
| New Jersey | 45 | 40 | 30 | 22 | 22 | 24 | 25 | 25 | 30 | 32 | 38 | 45 |
| Pennsylvania | 39 | 32 | 26 | 18 | 18 | 19 | 20 | 21 | 24 | 27 | 33 | 38 |
| Delaware | 38 | 29 | 26 | 20 | 18 | 18 | 18 | 20 | 23 | 26 | 34 | 39 |
| Maryland | 36 | 30 | 22 | 17 | 18 | 18 | 19 | 18 | 20 | 24 | 29 | 35 |
| Virginia | 31 | 27 | 20 | 16 | 17 | 17 | 17 | 17 | 18 | 23 | 25 | 29 |
| West Virginia | 32 | 30 | 23 | 18 | 17 | 18 | 18 | 19 | 20 | 23 | 25 | 30 |
| North Carolina | 27 | 25 | 17 | 15 | 16 | 16 | 16 | 15 | 17 | 20 | 23 | 25 |
| South Carolina | 25 | 24 | 19 | 17 | 18 | 18 | 18 | 17 | 19 | 24 | 24 | 27 |
| Georgia | 27 | 23 | 17 | 16 | 16 | 15 | 16 | 15 | 17 | 21 | 24 | 27 |
| Florida | 32 | 28 | 22 | 21 | 20 | 20 | 21 | 22 | 23 | 28 | 29 | 32 |
| Ohio | 33 | 31 | 20 | 17 | 18 | 17 | 17 | 18 | 19 | 24 | 28 | 33 |
| Indiana | 32 | 30 | 19 | 16 | 17 | 16 | 16 | 16 | 18 | 22 | 26 | 31 |
| Illinois | 32 | 31 | 21 | 16 | 17 | 16 | 16 | 16 | 17 | 21 | 25 | 29 |
| Michigan | 32 | 30 | 25 | 18 | 18 | 17 | 18 | 18 | 20 | 23 | 26 | 30 |
| Wisconsin | 30 | 30 | 24 | 17 | 17 | 17 | 17 | 17 | 18 | 20 | 25 | 29 |
| Minnesota | 31 | 30 | 23 | 16 | 17 | 16 | 16 | 16 | 17 | 20 | 25 | 29 |
| Iowa | 28 | 30 | 22 | 16 | 17 | 16 | 15 | 15 | 16 | 20 | 23 | 27 |
| Missouri | 28 | 28 | 18 | 16 | 16 | 15 | 15 | 14 | 15 | 19 | 22 | 25 |
| North Dakota | 31 | 29 | 25 | 16 | 15 | 15 | 15 | 14 | 16 | 20 | 24 | 29 |
| South Dakota | 28 | 29 | 23 | 16 | 16 | 15 | 15 | 15 | 17 | 19 | 23 | 26 |
| Nebraska | 27 | 26 | 20 | 15 | 15 | 15 | 16 | 13 | 15 | 18 | 23 | 27 |
| Kansas | 27 | 26 | 18 | 15 | 16 | 15 | 14 | 14 | 15 | 19 | 22 | 27 |
| Kentucky | 29 | 27 | 17 | 15 | 15 | 14 | 14 | 14 | 15 | 19 | 23 | 27 |
| Tennessee | 27 | 25 | 17 | 14 | 15 | 13 | 13 | 13 | 15 | 18 | 21 | 26 |
| Alabama | 25 | 22 | 16 | 14 | 15 | 14 | 13 | 13 | 14 | 17 | 20 | 24 |
| Mississippi | 24 | 23 | 16 | 15 | 15 | 14 | 15 | 14 | 15 | 19 | 22 | 24 |
| Louisiana | 26 | 25 | 20 | 16 | 18 | 16 | 18 | 17 | 19 | 21 | 23 | 23 |
| Texas | 27 | 23 | 16 | 14 | 13 | 13 | 13 | 14 | 15 | 17 | 21 | 24 |
| Oklahoma | 25 | 25 | 18 | 14 | 14 | 14 | 13 | 12 | 14 | 17 | 20 | 25 |
| Arkansas | 26 | 26 | 18 | 15 | 15 | 14 | 15 | 14 | 16 | 18 | 21 | 24 |
| Montana | 43 | 38 | 29 | 21 | 19 | 21 | 21 | 23 | 25 | 30 | 31 | 37 |
| Wyoming | 37 | 35 | 28 | 23 | 20 | 20 | 22 | 22 | 25 | 29 | 30 | 36 |
| Colorado | 37 | 32 | 24 | 19 | 19 | 18 | 19 | 20 | 24 | 26 | 30 | 33 |
| New Mexico | 36 | 34 | 31 | 21 | 23 | 23 | 24 | 25 | 24 | 25 | 29 | 32 |
| Arizona | 36 | 35 | 27 | 21 | 21 | 28 | 22 | 30 | 27 | 30 | 35 | 44 |
| Utah | 36 | 32 | 22 | 18 | 17 | 17 | 18 | 18 | 20 | 24 | 27 | 32 |
| Nevada | 49 | 45 | 34 | 29 | 22 | 24 | 25 | 30 | 30 | 34 | 40 | 45 |
| Idaho | 39 | 33 | 25 | 17 | 18 | 17 | 19 | 23 | 24 | 26 | 28 | 35 |
| Washington | 41 | 33 | 24 | 19 | 19 | 19 | 21 | 24 | 26 | 29 | 33 | 39 |
| Oregon | 40 | 31 | 26 | 20 | 19 | 20 | 20 | 23 | 23 | 27 | 32 | 38 |
| California | 41 | 32 | 24 | 20 | 19 | 22 | 22 | 24 | 28 | 33 | 38 | 44 |
| United States | 31.6 | 29.2 | 21.3 | 16.6 | 17.1 | 16.6 | 16.8 | 17.0 | 18.7 | 22.3 | 26.3 | 30.6 |
| United States | 31.6 | 29.2 | 21.3 | 16.6 | 17.1 | 16.6 | 16.8 | 17.0 | 18.7 | 22.3 | 26.3 | 30.6 |
| North Atlantic | 41.7 | 34.3 | 27.8 | 19.7 | 20.5 | 21.1 | 22.2 | 23.8 | 27.2 | 30.8 | 37.6 | 42.6 |
| South Atlantic | 30.3 | 26.8 | 20.0 | 16.7 | 17.0 | 17.0 | 17.4 | 17.1 | 18.7 | 22.7 | 25.4 | 29.2 |
| N. Central E. Miss. R | 32.0 | 30.5 | 21.4 | 16.7 | 17.4 | 16.5 | 16.7 | 17.0 | 18.3 | 22.2 | 26.1 | 30.6 |
| N. Central W. Miss. R | 28.1 | 28.2 | 20.3 | 15.7 | 16.3 | 15.4 | 15.0 | 14.4 | 15.6 | 19.8 | 22.8 | 26.8 |
| South Central | 26.5 | 24.5 | 17.0 | 14.5 | 14.6 | 13.7 | 13.8 | 13.8 | 15.2 | 18.0 | 21.3 | 24.8 |
| Far Western | 39.9 | 32.5 | 24.7 | 19.7 | 19.0 | 20.5 | 21.0 | 23.1 | 25.8 | 29.7 | 33.9 | 39.6 |

## BUTTER AND EGGS—Continued.

**Table 161.**—*Butter: Receipts at seven leading markets in the United States, 1891–1915.*

[From Board of Trade, Chamber of Commerce, and Merchants' Exchange reports.]

[000 omitted.]

| Year. | Boston. | Chicago. | Milwaukee. | St. Louis. | San Francisco. | Total 5 cities. | Cincinnati. | New York. |
|---|---|---|---|---|---|---|---|---|
| Averages: | *Pounds.* | *Pounds.* | *Pounds.* | *Pounds.* | *Pounds.* | *Pounds.* | *Packages.* | *Packages.* |
| 1891–1895 | 40,955 | 145,225 | 3,996 | 13,944 | 15,240 | 219,360 | 88 | 1,741 |
| 1896–1900 | 50,790 | 232.289 | 5,006 | 14,582 | 14,476 | 317,234 | 157 | 2,010 |
| 1901–1905 | 57,716 | 245,203 | 7,164 | 14,685 | 15,026 | 339,793 | 177 | 2,122 |
| 1906–1910 | 66,612 | 286,518 | 8,001 | 17,903 | 13,581 | 392,615 | 169 | 2,207 |
| 1901 | 57,500 | 253,809 | 5,590 | 13,477 | 14,972 | 345,348 | 238 | 2,040 |
| 1902 | 54,574 | 219,233 | 7,200 | 14,573 | 14,801 | 310,471 | 223 | 1,933 |
| 1903 | 54,347 | 232,032 | 6,857 | 14,080 | 13,570 | 320,886 | 121 | 2,113 |
| 1904 | 55,435 | 249,024 | 7,993 | 15,727 | 14,336 | 312,515 | 147 | 2,170 |
| 1905 | 66,725 | 271,915 | 8,091 | 15,506 | 17,450 | 379,747 | 155 | 2,355 |
| 1906 | 65,152 | 248,648 | 8,209 | 13,198 | 9,282 | 344,489 | 205 | 2,242 |
| 1907 | 63,589 | 263,715 | 8,219 | 13,453 | 16,725 | 365,701 | 187 | 2,113 |
| 1908 | 69,843 | 316,695 | 8,798 | 18,614 | 13,528 | 427,478 | 166 | 2,175 |
| 1909 | 65,054 | 284,547 | 7,458 | 21,056 | 14,449 | 392,594 | 150 | 2,250 |
| 1910 | 69,421 | 318,986 | 7,319 | 23,103 | 13,922 | 432,811 | 135 | 2,257 |
| 1911 | 63,874 | 334,932 | 8,632 | 21,839 | 17,606 | 449,883 | 162 | 2,405 |
| 1912 | 72,109 | 286,213 | 7,007 | 20,521 | 28,172 | 414,022 | 109 | 2,436 |
| 1913 | 70,737 | 277,651 | 9,068 | 24,726 | 23,122 | 405,304 | 103 | 2,517 |
| 1914 | 73,028 | 307,899 | 9,496 | 24,614 | 22,421 | 437,458 | 82 | 2,513 |
| 1915 | 82,396 | 341,202 | 8,624 | 21,079 | 28,349 | [1] 481,650 | 130 | 2,734 |
| 1915 | | | | | | | | |
| January | 3,354 | 19,950 | 771 | 1,873 | 1,594 | 27,541 | 6 | 176 |
| February | 3,089 | 18,515 | 510 | 1,773 | 1,554 | 25,441 | 12 | 166 |
| March | 4,311 | 22,202 | 497 | 2,005 | 2,576 | 31,590 | 12 | 181 |
| April | 5,674 | 21,248 | 448 | 1,399 | 2,996 | 31,766 | 9 | 170 |
| May | 7,798 | 30,298 | 876 | 1,865 | 3,155 | 43,991 | 8 | 224 |
| June | 16,268 | 47,765 | 1,079 | 2,181 | 2,775 | 70,068 | 12 | 389 |
| July | 14,474 | 43,312 | 883 | 2,188 | 3,599 | 64,455 | 10 | 340 |
| August | 10,150 | 38,651 | 717 | 1,913 | 2,591 | 54,022 | 12 | 281 |
| September | 7,883 | 32,990 | 582 | 1,660 | 2,024 | 45,140 | 11 | 271 |
| October | 4,274 | 25,659 | 534 | 1,624 | 1,921 | 34,012 | 11 | 219 |
| November | 2,943 | 21,886 | 483 | 1,314 | 1,732 | 28,359 | 12 | 166 |
| December | 2,178 | 18,726 | 1,244 | [1] 1,284 | 1,832 | [1] 25,265 | 15 | 151 |

[1] Preliminary.

## BUTTER AND EGGS—Continued.

TABLE 162.—*Eggs: Receipts at seven leading markets in the United States, 1891–1915.*

[From Board of Trade, Chamber of Commerce, and Merchants' Exchange reports.]

| Year. | Boston. | Chicago. | Cincinnati. | Milwaukee. | New York. | St. Louis. | San Francisco. | Total. |
|---|---|---|---|---|---|---|---|---|
| Averages: | *Cases.* | *Cases.* | *Cases.* | *Cases.* | *Cases.* | *Cases.* | *Cases.* | *Cases.* |
| 1891–1895 | 722,363 | 1,879,065 | 288,548 | 90,943 | 2,113,946 | 557,320 | 166,059 | 5,818,244 |
| 1896–1900 | 912,807 | 2,196,631 | 362,262 | 113,327 | 2,664,074 | 852,457 | 194,087 | 7,295,645 |
| 1901–1905 | 1,155,340 | 2,990,675 | 418,842 | 139,718 | 3,057,298 | 1,000,935 | 304,933 | 9,067,741 |
| 1906–1910 | 1,517,995 | 4,467,040 | 509,017 | 180,362 | 4,046,360 | 1,304,719 | 334,766 | 12,360,259 |
| 1901 | 1,040,555 | 2,783,709 | 493,218 | 128,179 | 2,909,194 | 1,022,646 | 277,500 | 8,655,001 |
| 1902 | 1,053,165 | 2,659,340 | 464,799 | 114,732 | 2,743,642 | 825,999 | 285,058 | 8,146,735 |
| 1903 | 1,164,777 | 3,279,248 | 338,327 | 129,278 | 2,940,091 | 959,648 | 335,228 | 9,146,597 |
| 1904 | 1,122,819 | 3,113,858 | 377,263 | 166,409 | 3,215,924 | 1,216,124 | 319,637 | 9,532,034 |
| 1905 | 1,395,385 | 3,117,221 | 420,604 | 159,990 | 3,477,638 | 980,257 | 307,243 | 9,858,338 |
| 1906 | 1,709,531 | 3,583,878 | 484,208 | 187,561 | 3,981,013 | 1,023,125 | 137,074 | 11,106,390 |
| 1907 | 1,594,576 | 4,780,356 | 588,636 | 176,826 | 4,262,153 | 1,288,977 | 379,439 | 13,070,963 |
| 1908 | 1,436,786 | 4,569,014 | 441,072 | 207,558 | 3,703,990 | 1,439,868 | 347,436 | 12,145,724 |
| 1909 | 1,417,397 | 4,557,906 | 519,652 | 160,418 | 3,903,867 | 1,395,987 | 340,185 | 12,295,412 |
| 1910 | 1,431,686 | 4,844,045 | 511,519 | 169,448 | 4,380,777 | 1,375,638 | 469,698 | 13,182,811 |
| 1911 | 1,441,748 | 4,707,335 | 605,131 | 175,270 | 5,021,757 | 1,736,915 | 587,115 | 14,275,271 |
| 1912 | 1,580,106 | 4,556,643 | 668,942 | 136,621 | 4,723,558 | 1,391,611 | 638,920 | 13,696,401 |
| 1913 | 1,589,399 | 4,593,800 | 594,954 | 187,931 | 4,666,117 | 1,397,962 | 574,222 | 13,604,385 |
| 1914 | 1,531,329 | 4,083,163 | 461,783 | 221,345 | 4,762,174 | 1,470,716 | 619,508 | 13,150,018 |
| 1915 | 1,766,185 | 4,896,246 | 806,834 | 199,521 | 4,582,218 | 1,446,607 | 629,571 | [1] 14,327,182 |
| 1915. | | | | | | | | |
| January | 43,955 | 140,771 | 15,698 | 2,500 | 175,787 | 46,213 | 40,941 | 465,865 |
| February | 76,711 | 159,515 | 39,134 | 4,081 | 218,329 | 95,098 | 51,777 | 644,645 |
| March | 221,044 | 389,063 | 152,789 | 19,527 | 580,479 | 230,317 | 87,313 | 1,680,532 |
| April | 286,951 | 820,138 | 131,919 | 33,202 | 789,492 | 243,105 | 85,419 | 2,390,226 |
| May | 336,312 | 887,313 | 121,025 | 58,733 | 674,571 | 238,066 | 78,585 | 2,394,605 |
| June | 228,654 | 780,765 | 87,649 | 21,508 | 529,168 | 130,547 | 61,165 | 1,839,456 |
| July | 169,596 | 574,813 | 67,526 | 16,034 | 417,542 | 129,128 | 58,773 | 1,433,412 |
| August | 110,306 | 342,719 | 32,925 | 13,927 | 328,004 | 80,863 | 54,120 | 962,864 |
| September | 97,719 | 302,780 | 33,491 | 12,365 | 277,863 | 79,191 | 33,369 | 836,778 |
| October | 70,639 | 246,743 | 26,187 | 6,770 | 229,386 | 82,276 | 27,222 | 689,223 |
| November | 60,437 | 136,258 | 44,467 | 6,605 | 175,721 | 53,750 | 21,137 | 498,375 |
| December | 63,861 | 115,368 | 54,024 | 4,269 | 185,876 | [1] 38,053 | 29,750 | [1] 491,201 |

[1] Preliminary.

TABLE 163.—*Eggs: Wholesale price per dozen, 1900–1915.*

| Date. | Chicago. | | Cincinnati. | | St. Louis. | | Milwaukee. | | New York. | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Fresh. | | | | Average best fresh. | | Fresh. | | Average best fresh. | |
| | Low. | High. | Low. | High. | Low. | High. | Low. | High. | Low. | High. |
| | *Cents.* | *Cents.* | *Cents.* | *Cents.* | *Cents.* | *Cents.* | *Cents.* | *Cents.* | *Cents.* | *Cents.* |
| 1900 | 10 | 26 | 9 | 22 | 8 | 23 | 10 | 24 | 12 | 29 |
| 1901 | 10 | 28 | 9 | 27 | 6 | 25 | 10 | 24 | 13 | 31 |
| 1902 | 13¾ | 32½ | 13 | 32 | 11¼ | 32 | 13½ | 30 | 15½ | 37 |
| 1903 | 10 | 30 | 12 | 28 | 11 | 28½ | 12½ | 27 | 15 | 45 |
| 1904 | 11 | 34½ | 14½ | 32 | 13 | 29 | 13½ | 32 | 16 | 47 |
| 1905 | 12 | 36 | 14 | 30 | 10½ | 34 | 14 | 31 | 16½ | 49 |
| 1906 | 11 | 36 | 13 | 29 | 11½ | 26 | 12½ | 33 | 14½ | 45 |
| 1907 | 13 | 30 | 13½ | 29 | 12 | 25½ | 12½ | 28 | 16 | 50 |
| 1908 | 14 | 33 | 13 | 36 | 12½ | 29 | 13 | 32 | 15 | 55 |
| 1909 | 17½ | 36½ | 17 | 37 | 16 | 40 | 14 | 34 | 19 | 55 |
| 1910 | 15 | 38 | 17 | 40 | 14½ | 35 | 10 | 30 | 22 | 55 |
| 1911 | 12 | 32 | 12½ | 39 | 11 | 29 | 11 | 32 | 17 | 60 |
| 1912 | 17 | 40 | 17 | 40 | 14½ | 39 | 15 | 38 | 20½ | 60 |
| 1913 | 16 | 37 | 15½ | 42 | 12 | 35 | 13 | 35 | 20 | 65 |
| 1914 | 17 | 36 | [1] 16½ | 38½ | 14 | 35 | 15 | 32 | 20 | 62 |

[1] Prime firsts.

## BUTTER AND EGGS—Continued.

### TABLE 163.—*Eggs: Wholesale price per dozen, 1900-1915*—Continued.

| Date. | Chicago. |  | Cincinnati. |  | St. Louis. |  | Milwaukee. |  | New York. |  |
|---|---|---|---|---|---|---|---|---|---|---|
|  | Fresh. |  |  |  | Average best fresh. |  | Fresh. |  | Average best fresh. |  |
|  | Low. | High. | Low. | High. | Low. | High. | Low. | High. | Low. | High. |
| 1915. | *Cents.* | *Cents.* | *Cents.* | *Cents.* | *Cents.* | *Cents.* | *Cents.* | *Cents.* | *Cents.* | *Cents.* |
| January | 29 | 38 | 20 | 40½ | 28¼ | 37½ | 25 | 34 | 30 | 44 |
| February | 21 | 28 | 16 | 27 | 20 | 28 | 20 | 29 | 33 | 40 |
| March | 17 | 19½ | 14 | 20 | 17 | 18¾ | 16 | 20½ | 18½ | 20¾ |
| April | 18¼ | 19¾ | 14½ | 19½ | 17¾ | 19 | 16½ | 18½ | 19½ | 22 |
| May | 16½ | 18¾ | 12½ | 18 | 16 | 18 | 16 | 18 | 18 | 21½ |
| June | 16 | 18 | 12½ | 18½ | 15¼ | 16¾ | 15½ | 16½ | 18½ | 21 |
| July | 16 | 17½ | 11 | 19 | 14½ | 15½ | 15½ | 16 | 18 | 21 |
| August | 16 | 21½ | 10 | 24 | 15½ | 20 | 15½ | 21 | 18 | 24½ |
| September | 21 | 24 | 17 | 27 | 20 | 22 | 19½ | 22½ | 24 | 29 |
| October | 23 | 27½ | 17½ | 30 | 21½ | 25½ | 20½ | 26 | 27 | 34 |
| November | 27 | 30½ | 17 | 36 | 26 | 30 | 24 | 30 | 30 | 40 |
| December | 26½ | 30½ | 19 | 34½ | 24½ | 29½ | 26 | 32 | 31 | 37 |
| Year | 16 | 38 | 10 | 40½ | 14½ | 37½ | 15½ | 34 | 18 | 44 |

## CHEESE.

### TABLE 164.—*Cheese: International trade, calendar years 1912-1914.*

[Cheese includes all cheese made from milk; "cottage cheese," of course, is included. See "General note," p. 417.]

#### EXPORTS.

[000 omitted.]

| Country. | 1912 | 1913 | 1914 (prelim.). | Country. | 1912 | 1913 | 1914 (prelim.). |
|---|---|---|---|---|---|---|---|
|  | *Pounds.* | *Pounds.* | *Pounds.* |  | *Pounds.* | *Pounds.* | *Pounds.* |
| Bulgaria | 4,030 | [1] 4,030 | .......... | Russia | 7,455 | 8,373 | .......... |
| Canada | 154,345 | 148,849 | 138,265 | Switzerland | 66,435 | 78,739 | .......... |
| France | 27,690 | 31,405 | .......... | United States | 3,006 | 2,654 | 3,797 |
| Germany | 1,812 | 1,603 | .......... | Other countries | 9,982 | 13,903 | .......... |
| Italy | 67,505 | 72,321 | 65,409 |  |  |  |  |
| Netherlands | 131,107 | 145,337 | .......... | Total | 537,999 | 575,720 | .......... |
| New Zealand | 64,632 | 68,506 | .......... |  |  |  |  |

#### IMPORTS.

| Country. | 1912 | 1913 | 1914 (prelim.). | Country. | 1912 | 1913 | 1914 (prelim.). |
|---|---|---|---|---|---|---|---|
| Algeria | 6,747 | [1] 6,747 | .......... | Germany | 47,277 | 57,903 | .......... |
| Argentina | 11,849 | 11,122 | 8,453 | Italy | 10,069 | 12,355 | 9,836 |
| Australia | 444 | 365 | .......... | Russia | 3,853 | 4,545 | 4,048 |
| Austria-Hungary | 12,797 | 13,200 | .......... | Spain | 5,180 | 5,749 | 5,150 |
| Belgium | 31,352 | 35,845 | .......... | Switzerland | 7,995 | 7,763 | .......... |
| Brazil | 6,280 | 4,196 | 3,288 | United Kingdom | 250,823 | 249,972 | 266,591 |
| British South Africa | 5,242 | 5,694 | 5,300 | United States | 48,929 | 55,590 | 55,477 |
| Cuba | 4,232 | 5,200 | 4,229 | Other countries | 19,491 | 22,262 | .......... |
| Denmark | 1,295 | 1,475 | .......... |  |  |  |  |
| Egypt | 7,425 | 6,378 | 5,953 | Total | 528,838 | 558,226 | .......... |
| France | 47,558 | 51,865 | .......... |  |  |  |  |

[1] Year preceding.

## CHICKENS.

TABLE 165.—*Chickens: Average price per pound received by farmers on first of each month indicated, 1914 and 1915.*

| State. | 1914 |  |  |  |  |  | 1915 |  |  |  |  |  |  |  |  |  |  |  |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  | Feb. | Apr. | June. | Aug. | Oct. | Dec. | Jan. | Feb. | Mar. | Apr. | May. | June. | July. | Aug. | Sept. | Oct. | Nov. | Dec. |
| Maine | 14.9 | 14.5 | 14.4 | 15.9 | 14.7 | 14.0 | 14.0 | 13.8 | 14.6 | 14.2 | 15.0 | 14.5 | 15.4 | 14.8 | 14.8 | 16.0 | 14.6 | 14.0 |
| New Hampshire | 15.0 | 13.6 | 14.7 | 16.0 | 15.0 | 15.0 | 15.9 | 14.4 | 13.8 | 15.0 | 15.0 | 16.5 | 15.7 | 16.2 | 16.0 | 16.0 | 14.9 | 15.0 |
| Vermont | 14.1 | 13.2 | 14.0 | 14.0 | 14.1 | 14.5 | 13.4 | 14.7 | 13.7 | 13.4 | 14.0 | 14.6 | 14.2 | 15.1 | 14.5 | 14.0 | 15.6 | 14.5 |
| Massachusetts | 16.0 | 17.2 | 17.4 | 18.5 | 19.1 | 17.3 | 17.8 | 16.3 | 17.5 | 17.2 | 16.9 | 16.4 | 16.6 | 18.3 | 17.4 | 16.5 | 16.5 | 16.0 |
| Rhode Island | 20.0 | 18.0 | 18.0 | 21.0 | 19.5 | 16.5 | 16.8 | 16.5 | 20.0 | 18.0 | 18.9 | 18.0 | 21.0 | 18.0 | 18.3 | 19.7 | 17.8 | 17.5 |
| Connecticut | 17.0 | 16.6 | 16.5 | 18.0 | 18.5 | 17.7 | 17.7 | 17.7 | 17.8 | 18.6 | 18.2 | 18.0 | 18.8 | 18.8 | 18.7 | 20.0 | 18.8 | 17.8 |
| New York | 15.2 | 15.8 | 15.7 | 16.2 | 16.9 | 14.5 | 15.0 | 15.5 | 15.9 | 15.6 | 15.9 | 15.7 | 15.9 | 16.1 | 16.2 | 15.4 | 15.7 | 14.6 |
| New Jersey | 16.2 | 17.9 | 17.6 | 18.9 | 18.0 | 17.0 | 17.0 | 16.8 | 16.9 | 17.4 | 17.3 | 18.1 | 17.4 | 17.3 | 18.6 | 17.5 | 17.0 | 17.5 |
| Pennsylvania | 14.0 | 14.6 | 14.8 | 15.6 | 14.9 | 13.5 | 13.7 | 13.9 | 14.2 | 14.5 | 14.4 | 14.3 | 14.7 | 14.6 | 14.2 | 14.3 | 14.2 | 13.5 |
| Delaware | 12.5 | 14.5 | 15.0 | 19.0 | 15.5 | 13.0 | 13.5 | 12.3 | 14.5 | 13.5 | 14.3 | 14.2 | 13.0 | 13.0 | 13.0 | 15.0 | 13.0 | 13.0 |
| Maryland | 14.4 | 16.2 | 16.5 | 16.6 | 15.9 | 14.0 | 13.5 | 13.9 | 13.8 | 14.5 | 15.0 | 15.4 | 16.2 | 16.2 | 15.7 | 15.6 | 14.6 | 14.4 |
| Virginia | 14.3 | 14.5 | 14.9 | 15.2 | 14.2 | 13.2 | 13.1 | 13.1 | 13.4 | 13.6 | 14.1 | 14.8 | 15.5 | 15.3 | 14.5 | 14.1 | 14.0 | 13.5 |
| West Virginia | 12.9 | 13.4 | 12.8 | 13.9 | 13.9 | 13.0 | 12.7 | 13.3 | 12.8 | 13.0 | 12.9 | 13.2 | 13.5 | 13.6 | 13.4 | 12.9 | 13.0 | 12.5 |
| North Carolina | 11.6 | 11.7 | 12.9 | 13.1 | 12.6 | 12.0 | 11.3 | 11.5 | 11.6 | 11.2 | 11.8 | 12.9 | 12.9 | 13.0 | 12.7 | 12.4 | 12.8 | 12.0 |
| South Carolina | 12.9 | 13.5 | 13.5 | 13.2 | 13.1 | 12.8 | 12.7 | 12.5 | 12.7 | 12.2 | 12.3 | 13.9 | 12.7 | 13.5 | 13.6 | 13.1 | 12.7 | 13.0 |
| Georgia | 13.3 | 13.2 | 14.0 | 14.4 | 13.5 | 13.3 | 12.7 | 12.3 | 13.2 | 12.7 | 12.5 | 13.1 | 12.9 | 12.8 | 13.0 | 13.5 | 13.2 | 13.0 |
| Florida | 15.4 | 15.2 | 15.4 | 17.0 | 16.7 | 18.0 | 17.5 | 16.5 | 16.3 | 15.6 | 16.5 | 15.2 | 15.6 | 15.4 | 16.5 | 15.8 | 17.1 | 16.2 |
| Ohio | 12.1 | 13.1 | 13.0 | 13.3 | 12.9 | 11.1 | 10.7 | 11.5 | 11.7 | 12.6 | 12.6 | 12.6 | 12.3 | 12.5 | 12.7 | 12.5 | 12.2 | 11.7 |
| Indiana | 11.2 | 12.0 | 12.0 | 12.4 | 12.2 | 10.2 | 10.4 | 10.9 | 11.4 | 11.9 | 11.8 | 11.7 | 11.7 | 12.1 | 11.8 | 11.4 | 11.2 | 11.0 |
| Illinois | 11.2 | 12.1 | 12.5 | 12.3 | 11.9 | 10.6 | 10.7 | 10.9 | 11.4 | 11.7 | 11.8 | 11.7 | 11.7 | 11.8 | 11.8 | 11.4 | 11.5 | 11.0 |
| Michigan | 11.3 | 13.0 | 12.9 | 12.8 | 12.6 | 10.5 | 11.4 | 11.4 | 11.5 | 12.1 | 12.6 | 12.3 | 12.1 | 12.1 | 12.0 | 12.0 | 11.1 | 10.8 |
| Wisconsin | 11.3 | 11.3 | 12.5 | 12.4 | 12.4 | 10.5 | 10.8 | 11.0 | 11.5 | 11.9 | 12.3 | 12.1 | 12.1 | 11.8 | 11.8 | 11.7 | 11.1 | 10.5 |
| Minnesota | 10.1 | 10.8 | 10.6 | 11.3 | 11.0 | 9.3 | 9.3 | 9.8 | 10.2 | 10.0 | 10.3 | 10.7 | 10.2 | 10.3 | 10.2 | 10.3 | 9.9 | 9.9 |
| Iowa | 10.7 | 10.9 | 10.8 | 11.5 | 11.3 | 9.5 | 9.4 | 10.3 | 10.6 | 10.4 | 10.7 | 10.8 | 10.8 | 10.7 | 10.8 | 10.7 | 10.3 | 10.0 |
| Missouri | 10.6 | 11.8 | 12.0 | 11.5 | 11.2 | 10.0 | 9.5 | 10.7 | 10.8 | 11.4 | 11.2 | 11.5 | 11.5 | 11.4 | 11.1 | 10.9 | 10.7 | 10.4 |
| North Dakota | 10.2 | 10.2 | 10.2 | 10.4 | 11.0 | 9.7 | 8.9 | 10.0 | 10.0 | 10.3 | 10.5 | 10.2 | 11.4 | 10.7 | 10.9 | 10.5 | 10.8 | 9.7 |
| South Dakota | 9.3 | 8.8 | 9.4 | 9.7 | 9.9 | 9.1 | 9.1 | 9.2 | 9.0 | 9.2 | 8.9 | 9.2 | 9.3 | 9.7 | 9.7 | 9.4 | 9.4 | 8.8 |
| Nebraska | 9.5 | 10.7 | 10.1 | 10.7 | 10.5 | 9.3 | 8.9 | 9.4 | 9.6 | 10.0 | 10.7 | 9.9 | 9.6 | 9.8 | 9.6 | 9.4 | 9.1 | 9.6 |
| Kansas | 9.7 | 10.5 | 10.6 | 10.4 | 10.6 | 9.5 | 9.3 | 9.9 | 9.8 | 10.0 | 10.2 | 10.1 | 10.0 | 10.1 | 9.9 | 9.9 | 9.8 | 10.0 |
| Kentucky | 11.0 | 11.7 | 11.8 | 12.9 | 11.4 | 10.5 | 10.1 | 10.7 | 10.8 | 11.3 | 11.3 | 11.5 | 11.6 | 11.1 | 11.1 | 11.3 | 11.1 | 10.7 |
| Tennessee | 10.6 | 11.7 | 12.4 | 12.6 | 11.5 | 10.2 | 10.2 | 10.4 | 10.8 | 11.5 | 11.8 | 12.2 | 12.1 | 11.4 | 11.1 | 10.9 | 11.2 | 10.5 |
| Alabama | 12.5 | 12.2 | 13.0 | 14.0 | 13.6 | 13.3 | 12.2 | 12.5 | 12.0 | 12.2 | 11.9 | 12.5 | 12.8 | 12.3 | 11.6 | 12.4 | 12.0 | 12.5 |
| Mississippi | 11.5 | 12.5 | 13.0 | 12.7 | 12.3 | 12.4 | 12.4 | 11.9 | 11.1 | 11.3 | 11.5 | 12.3 | 13.0 | 11.6 | 12.0 | 11.6 | 12.1 | 12.0 |
| Louisiana | 13.3 | 13.5 | 12.9 | 13.0 | 13.6 | 13.7 | 14.2 | 14.6 | 14.0 | 13.4 | 14.5 | 14.8 | 15.5 | 14.6 | 14.0 | 15.4 | 14.5 | 14.6 |
| Texas | 9.9 | 9.9 | 10.4 | 10.6 | 10.5 | 10.0 | 10.0 | 9.6 | 9.6 | 9.9 | 9.9 | 10.3 | 10.1 | 10.8 | 10.9 | 10.6 | 10.8 | 10.2 |
| Oklahoma | 9.6 | 10.1 | 10.0 | 9.9 | 9.7 | 9.3 | 8.9 | 9.9 | 9.6 | 10.0 | 9.9 | 11.4 | 9.8 | 10.1 | 9.7 | 9.6 | 9.5 | 9.2 |
| Arkansas | 10.1 | 10.6 | 11.2 | 12.2 | 12.5 | 9.7 | 9.5 | 9.5 | 10.5 | 9.7 | 10.0 | 10.2 | 10.4 | 10.7 | 10.4 | 10.7 | 10.3 | 10.0 |
| Montana | 12.9 | 13.3 | 14.0 | 13.3 | 14.4 | 13.0 | 13.7 | 13.8 | 14.1 | 13.2 | 13.4 | 13.4 | 13.8 | 13.0 | 13.0 | 13.9 | 13.0 | 14.0 |
| Wyoming | 11.3 | 12.7 | 12.0 | 13.5 | 14.1 | 14.0 | 11.9 | 12.8 | 14.8 | 14.0 | 14.5 | 12.5 | 15.0 | 14.4 | 13.2 | 14.9 | 13.1 | 13.7 |
| Colorado | 13.1 | 12.6 | 13.0 | 12.8 | 14.1 | 13.0 | 13.5 | 12.9 | 12.0 | 13.2 | 13.1 | 12.8 | 12.8 | 13.1 | 13.8 | 12.6 | 13.0 | 12.0 |
| New Mexico | 15.0 | 13.2 | 15.0 | 13.2 | 13.9 | 13.8 | 13.2 | 15.1 | 14.0 | 14.2 | 13.4 | 12.6 | 12.8 | 12.3 | 12.6 | 13.2 | 14.3 | 12.9 |
| Arizona | 17.3 | 15.8 | 18.7 | 17.0 | 18.2 | 17.0 | 17.6 | 18.0 | 17.4 | 16.0 | 17.1 | 21.0 | 19.5 | 18.8 | 16.6 | 16.1 | 18.5 | 16.5 |
| Utah | 13.0 | 13.0 | 13.2 | 14.4 | 13.3 | 12.6 | 12.6 | 12.8 | 10.8 | 13.4 | 12.0 | 11.7 | 12.4 | 11.6 | 12.7 | 13.4 | 12.8 | 12.2 |
| Nevada | 19.0 | 22.8 | 19.3 | 18.0 | 21.0 | 24.0 | 17.5 | 18.7 | 20.3 | 22.0 | 22.0 | 22.0 | 25.0 | 21.0 | 21.0 | 20.8 | 21.0 | 19.8 |
| Idaho | 11.7 | 11.0 | 11.2 | 11.8 | 11.7 | 11.2 | 11.2 | 11.4 | 9.7 | 10.2 | 11.1 | 11.1 | 10.7 | 11.4 | 11.1 | 11.2 | 10.7 | 10.7 |
| Washington | 13.8 | 14.5 | 14.6 | 13.7 | 13.2 | 12.6 | 12.2 | 12.3 | 13.3 | 13.1 | 13.2 | 13.0 | 13.8 | 13.9 | 12.1 | 13.1 | 12.6 | 13.0 |
| Oregon | 12.8 | 13.8 | 14.1 | 13.2 | 13.8 | 12.0 | 12.7 | 11.4 | 12.7 | 12.6 | 13.8 | 12.3 | 11.9 | 13.0 | 11.8 | 12.4 | 12.4 | 11.9 |
| California | 16.0 | 15.2 | 15.6 | 16.0 | 15.5 | 16.5 | 16.9 | 16.9 | 16.0 | 15.5 | 16.0 | 16.0 | 15.8 | 15.7 | 15.8 | 15.9 | 15.3 | 16.0 |
| United States | 11.7 | 12.3 | 12.5 | 12.8 | 12.5 | 11.8 | 11.2 | 11.5 | 11.7 | 11.9 | 12.1 | 12.2 | 12.2 | 12.2 | 12.1 | 12.0 | 11.8 | 11.5 |

## SHEEP AND WOOL.

TABLE 166.—*Sheep: Number and value on farms in the United States, 1867–1916.*

NOTE.—Figures in *italics* are census returns; figures in roman are estimates of the Department of Agriculture. Estimates of numbers are obtained by applying estimated percentages of increase or decrease to the published numbers of the preceding year, except that a revised base is used for applying percentage estimates whenever new census data are available. It should also be observed that the census of 1910 giving numbers as of Apr. 15, is not strictly comparable with former censuses, which related to numbers June 1.

| Year. | Number. | Price per head Jan. 1. | Farm value Jan. 1. | Year. | Number. | Price per head Jan. 1. | Farm value Jan. 1. |
|---|---|---|---|---|---|---|---|
| 1867 | 39,385,000 | $2.50 | $98,644,000 | 1892 | 44,938,000 | $2.58 | $116,121,000 |
| 1868 | 38,992,000 | 1.82 | 71,053,000 | 1893 | 47,274,000 | 2.66 | 125,909,000 |
| 1869 | 37,724,000 | 1.64 | 62,037,000 | 1894 | 45,048,000 | 1.98 | 89,186,000 |
| 1870 | 40,853,000 | 1.96 | 79,876,000 | 1895 | 42,294,000 | 1.58 | 66,686,000 |
| *1870, census, June 1* | *28,477,951* | | | 1896 | 38,299,000 | 1.70 | 65,168,000 |
| | | | | 1897 | 36,819,000 | 1.82 | 67,021,000 |
| 1871 | 31,851,000 | 2.14 | 68,310,000 | 1898 | 37,657,000 | 2.46 | 92,721,000 |
| 1872 | 31,679,000 | 2.61 | 82,768,000 | 1899 | 39,114,000 | 2.75 | 107,698,000 |
| 1873 | 33,002,000 | 2.71 | 89,427,000 | 1900 | 41,883,000 | 2.93 | 122,666,000 |
| 1874 | 33,938,000 | 2.43 | 82,353,000 | *1900, census, June 1* | *61,503,713* | | |
| 1875 | 33,784,000 | 2.55 | 86,278,000 | | | | |
| 1876 | 35,935,000 | 2.37 | 85,121,000 | 1901[1] | 59,757,000 | 2.98 | 178,072,000 |
| 1877 | 35,804.000 | 2.13 | 76,362,000 | 1902 | 62,039,000 | 2.65 | 164,446,000 |
| 1878 | 35,740,000 | 2.21 | 78,898,000 | 1903 | 63,965,000 | 2.63 | 168,316,000 |
| 1879 | 38,124,000 | 2.07 | 78,965,000 | 1904 | 51,630,000 | 2.59 | 133,530,000 |
| 1880 | 40,766,000 | 2.21 | 90,231,000 | 1905 | 45,170,000 | 2.82 | 127,332,000 |
| *1880, census, June 1* | *35,192,074* | | | 1906 | 50,632,000 | 3.54 | 179,056,000 |
| | | | | 1907 | 53,240,000 | 3.84 | 204,210,000 |
| 1881 | 43,570,000 | 2.39 | 104,071,000 | 1908 | 54,631,000 | 3.88 | 211,736,000 |
| 1882 | 45,016,000 | 2.37 | 106,596,000 | 1909 | 56,084,000 | 3.43 | 192,632,000 |
| 1883 | 49,237,000 | 2.53 | 124,366,000 | 1910 | 57,216,000 | | |
| 1884 | 50,627,000 | 2.37 | 119,903,000 | *1910, census, Apr. 15* | *52,447,861* | 4.12 | 216,030,000 |
| 1885 | 50,360,000 | 2.14 | 107,961,000 | | | | |
| 1886 | 48,322,000 | 1.91 | 92,444,000 | 1911[1] | 53,633,000 | 3.91 | 209,535,000 |
| 1887 | 44,759,000 | 2.01 | 89,873,000 | 1912 | 52,362,000 | 3.46 | 181,170,000 |
| 1888 | 43,545,000 | 2.05 | 89,280,000 | 1913 | 51,482,000 | 3.94 | 202,779,000 |
| 1889 | 42,599,000 | 2.13 | 90,640,000 | 1914 | 49,719,000 | 4.02 | 200,045,000 |
| 1890 | 44,336,000 | 2.27 | 100,660,000 | 1915 | 49,956,000 | 4.50 | 224,687,000 |
| *1890, census, June 1* | *35,935,364* | | | 1916 | 49,162,000 | 5.17 | 254,348,000 |
| 1891 | 43,431,000 | 2.50 | 108,397,000 | | | | |

[1] Estimates of numbers revised based on census data.

TABLE 167.—*Sheep: Number and value on farms Jan. 1, 1915 and 1916, by States.*

| State. | Number (thousands) Jan. 1— | | Average price per head, Jan. 1— | | Farm value (thousands of dollars) Jan 1— | |
|---|---|---|---|---|---|---|
| | 1916 | 1915 | 1916 | 1915 | 1916 | 1915 |
| Maine | 162 | $105 | $4.80 | $4.50 | $778 | $742 |
| New Hampshire | 37 | 38 | 5.50 | 4.90 | 204 | 186 |
| Vermont | 100 | 105 | 5.90 | 5.10 | 590 | 536 |
| Massachusetts | 28 | 30 | 5.50 | 5.60 | 154 | 168 |
| Rhode Island | 6 | 7 | 5.90 | 5.20 | 35 | 36 |
| Connecticut | 18 | 19 | 5.80 | 5.70 | 104 | 108 |
| New York | 849 | 849 | 6.20 | 5.80 | 5,264 | 4,924 |
| New Jersey | 29 | 31 | 6.40 | 6.00 | 186 | 186 |
| Pennsylvania | 856 | 831 | 5.60 | 5.30 | 4,794 | 4,404 |
| Delaware | 8 | 8 | 5.30 | 5.30 | 42 | 42 |
| Maryland | 223 | 223 | 5.40 | 5.20 | 1,204 | 1,160 |
| Virginia | 734 | 720 | 4.90 | 4.50 | 3,597 | 3,240 |
| West Virginia | 796 | 796 | 5.10 | 4.50 | 4,060 | 3,582 |
| North Carolina | 170 | 177 | 3.20 | 3.30 | 544 | 584 |
| South Carolina | 30 | 32 | 2.70 | 2.60 | 81 | 83 |
| Georgia | 161 | 163 | 2.40 | 2.30 | 386 | 375 |
| Florida | 119 | 119 | 2.30 | 2.20 | 274 | 262 |
| Ohio | 3,067 | 3,263 | 5.40 | 4.70 | 16,562 | 15,336 |
| Indiana | 1,058 | 1,114 | 6.10 | 5.40 | 6,454 | 6,016 |
| Illinois | 907 | 935 | 5.90 | 5.40 | 5,351 | 5,049 |

## SHEEP AND WOOL—Continued.

TABLE 167.—*Sheep: Number and value on farms Jan. 1, 1915 and 1916, by States*—Con.

| State. | Number (thousands) Jan. 1— | | Average price per head, Jan. 1— | | Farm value (thousands of dollars) Jan. 1— | |
|---|---|---|---|---|---|---|
| | 1916 | 1915 | 1916 | 1915 | 1916 | 1915 |
| Michigan | 1,931 | 2,033 | 5.70 | 5.00 | 11,007 | 10,165 |
| Wisconsin | 664 | 781 | 5.30 | 5.00 | 3,519 | 3,905 |
| Minnesota | 536 | 564 | 4.80 | 4.60 | 2,573 | 2,594 |
| Iowa | 1,274 | 1,249 | 6.30 | 5.60 | 8,026 | 6,994 |
| Missouri | 1,416 | 1,490 | 5.80 | 5.00 | 8,213 | 7,450 |
| North Dakota | 250 | 250 | 5.10 | 4.50 | 1,275 | 1,125 |
| South Dakota | 604 | 636 | 5.20 | 4.50 | 3,141 | 2,862 |
| Nebraska | 374 | 374 | 5.40 | 4.80 | 2,020 | 1,795 |
| Kansas | 341 | 316 | 5.60 | 4.90 | 1,910 | 1,548 |
| Kentucky | 1,155 | 1,229 | 4.90 | 4.20 | 5,660 | 5,162 |
| Tennessee | 661 | 674 | 4.10 | 3.70 | 2,710 | 2,494 |
| Alabama | 119 | 119 | 2.60 | 2.30 | 309 | 274 |
| Mississippi | 208 | 208 | 2.50 | 2.20 | 520 | 458 |
| Louisiana | 185 | 180 | 2.30 | 2.20 | 426 | 396 |
| Texas | 2,156 | 2,114 | 3.70 | 3.20 | 7,977 | 6,765 |
| Oklahoma | 95 | 76 | 5.00 | 4.20 | 475 | 319 |
| Arkansas | 124 | 130 | 2.90 | 2.60 | 360 | 338 |
| Montana | 3,941 | 4,379 | 5.10 | 4.40 | 20,099 | 19,268 |
| Wyoming | 4,338 | 4,427 | 5.60 | 4.70 | 24,293 | 20,807 |
| Colorado | 1,839 | 1,751 | 5.20 | 4.40 | 9,563 | 7,704 |
| New Mexico | 3,440 | 3,340 | 4.30 | 3.50 | 14,792 | 11,690 |
| Arizona | 1,849 | 1,761 | 4.70 | 4.00 | 8,690 | 7,044 |
| Utah | 2,089 | 2,068 | 5.40 | 4.50 | 11,281 | 9,306 |
| Nevada | 1,532 | 1,532 | 5.80 | 4.90 | 8,886 | 7,507 |
| Idaho | 3,102 | 3,041 | 5.60 | 4.70 | 17,371 | 14,293 |
| Washington | 568 | 546 | 5.30 | 4.80 | 3,010 | 2,621 |
| Oregon | 2,563 | 2,563 | 5.20 | 4.50 | 13,328 | 11,534 |
| California | 2,450 | 2,500 | 5.00 | 4.50 | 12,250 | 11,250 |
| United States | 49,162 | 49,956 | 5.17 | 4.50 | 254,348 | 224,687 |

TABLE 168.—*Sheep: Imports, exports, and prices, 1893–1915.*

| Year ending June 30— | Imports. | | | Exports. | | |
|---|---|---|---|---|---|---|
| | Number. | Value. | Average import price. | Number. | Value. | Average export price. |
| 1893 | 459,484 | $1,682,977 | $3.66 | 37,260 | $126,394 | $3.39 |
| 1894 | 242,568 | 788,181 | 3.25 | 132,370 | 832,763 | 6.29 |
| 1895 | 291,461 | 682,618 | 2.34 | 405,748 | 2,630,686 | 6.48 |
| 1896 | 322,692 | 853,530 | 2.65 | 491,565 | 3,076,384 | 6.26 |
| 1897 | 405,633 | 1,019,608 | 2.51 | 244,120 | 1,531,645 | 6.27 |
| 1898 | 392,314 | 1,106,322 | 2.82 | 199,690 | 1,213,886 | 6.08 |
| 1899 | 345,911 | 1,200,081 | 3.47 | 143,286 | 853,555 | 5.96 |
| 1900 | 381,792 | 1,365,026 | 3.58 | 125,772 | 733,477 | 5.83 |
| 1901 | 331,488 | 1,236,277 | 3.73 | 297,925 | 1,933,000 | 6.49 |
| 1902 | 266,953 | 956,710 | 3.58 | 358,720 | 1,940,060 | 5.41 |
| 1903 | 301,623 | 1,036,934 | 3.44 | 176,961 | 1,067,860 | 6.03 |
| 1904 | 238,094 | 815,289 | 3.42 | 301,313 | 1,954,604 | 6.49 |
| 1905 | 186,942 | 704,721 | 3.77 | 268,365 | 1,687,321 | 6.29 |
| 1906 | 240,747 | 1,020,359 | 4.24 | 142,690 | 804,090 | 5.64 |
| 1907 | 224,798 | 1,120,425 | 4.98 | 135,344 | 750,242 | 5.54 |
| 1908 | 224,765 | 1,082,606 | 4.82 | 101,000 | 589,285 | 5.83 |
| 1909 | 102,663 | 502,640 | 4.90 | 67,656 | 365,155 | 5.40 |
| 1910 | 126,152 | 696,879 | 5.52 | 44,517 | 209,000 | 4.69 |
| 1911 | 53,455 | 377,625 | 7.06 | 121,491 | 636,272 | 5.24 |
| 1912 | 23,588 | 157,257 | 6.67 | 157,263 | 626,985 | 3.99 |
| 1913 | 15,428 | 90,021 | 5.83 | 187,132 | 605,725 | 3.24 |
| 1914 | 223,719 | 532,404 | 2.38 | [a]152,600 | 534,543 | 3.50 |
| 1915 | 153,317 | 533,967 | 3.48 | 47,218 | 182,278 | 3.86 |

## SHEEP AND WOOL—Continued.

### TABLE 169.—*Sheep: Wholesale price per 100 pounds, 1900–1915.*

| Date. | Chicago. | | Cincinnati. | | St. Louis. | | Kansas City. | | Omaha. | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Native. | | Good to extra. | | Good to choice natives. | | Native. | | Western.[1] | |
| | Low. | High. | Low. | High. | Low. | High. | Low. | High. | Low. | High. |
| 1900 | $2.00 | $6.50 | $1.25 | $6.00 | $3.40 | $6.25 | $2.75 | $6.50 | $2.00 | $6.10 |
| 1901 | 1.40 | 5.25 | 2.10 | 5.00 | 3.00 | 5.10 | 1.50 | 5.00 | 2.00 | 5.00 |
| 1902 | 1.25 | 6.50 | 2.50 | 5.75 | 3.65 | 6.35 | 2.00 | 6.50 | 2.00 | 6.25 |
| 1903 | 1.25 | 7.00 | 2.60 | 6.25 | 3.50 | 6.25 | 2.25 | 6.80 | 3.00 | 6.75 |
| 1904 | 1.50 | 6.00 | 2.75 | 4.60 | 3.75 | 5.65 | 2.00 | 6.00 | 2.25 | 5.90 |
| 1905 | 2.75 | 4.50 | 3.60 | 5.50 | 4.60 | 6.35 | 2.75 | 6.90 | 2.50 | 6.90 |
| 1906 | 3.00 | 6.50 | 3.85 | 5.75 | 5.00 | 6.45 | 2.50 | 6.75 | 2.75 | 6.50 |
| 1907 | 2.00 | 7.00 | 3.65 | 5.90 | 4.25 | 7.00 | 2.25 | 7.75 | 3.00 | 7.75 |
| 1908 | 1.50 | 7.00 | 2.75 | 5.50 | 4.10 | 6.90 | 1.50 | 7.15 | 1.25 | 7.40 |
| 1909 | 2.00 | 6.90 | 3.35 | 5.75 | 4.25 | 6.65 | 2.00 | 8.00 | 2.00 | 6.70 |
| 1910 | 1.50 | 9.00 | 3.00 | 7.00 | 3.75 | 8.75 | 2.00 | 9.50 | 2.00 | 8.25 |
| 1911 | 1.25 | 5.25 | 2.40 | 5.15 | 3.50 | 5.00 | 1.50 | 6.25 | 2.50 | 6.20 |
| 1912 | 1.50 | 8.25 | 2.85 | 5.50 | 3.75 | 7.00 | [2] 3.30 | [2] 8.00 | 3.00 | 8.00 |
| 1913 | 2.00 | 7.50 | 3.25 | 7.00 | 4.00 | 7.25 | 2.00 | 7.50 | 2.75 | 8.15 |
| 1914 | 2.00 | 7.00 | 4.00 | 6.15 | 4.50 | 6.50 | [2] 2.25 | 7.50 | 4.80 | 8.00 |
| 1915. | | | | | | | | | | |
| January | 3.00 | 8.00 | 4.10 | 5.00 | ........ | ........ | 4.50 | 7.80 | 4.75 | 4.75 |
| February | 3.75 | 8.65 | 4.50 | 5.75 | ........ | ........ | 5.00 | 8.00 | 4.75 | 4.75 |
| March | 4.00 | 9.25 | 5.50 | 8.75 | ........ | ........ | 5.50 | 8.75 | 7.00 | 7.00 |
| April | 4.00 | 8.50 | 6.10 | 7.00 | ........ | ........ | 6.50 | 10.00 | 7.00 | 7.00 |
| May | 3.50 | 10.65 | 5.00 | 8.75 | ........ | ........ | 5.50 | 9.75 | 6.75 | 6.75 |
| June | 2.50 | 9.25 | 4.25 | 5.50 | ........ | ........ | 4.50 | 9.00 | 4.00 | 4.00 |
| July | 2.00 | 8.75 | 4.50 | 5.75 | ........ | ........ | 4.50 | 8.00 | 4.25 | 4.25 |
| August | 2.50 | 7.75 | 4.75 | 8.75 | ........ | ........ | 4.00 | 8.00 | 4.50 | 4.50 |
| September | 2.00 | 7.50 | 4.60 | 5.50 | ........ | ........ | 4.00 | 8.00 | 4.50 | 4.50 |
| October | 3.00 | 7.65 | 4.75 | 8.15 | ........ | ........ | 4.00 | 8.00 | 4.50 | 4.50 |
| November | 2.75 | 7.75 | 4.75 | 6.00 | ........ | ........ | 5.00 | 7.25 | 4.50 | 4.50 |
| December | 3.00 | 8.50 | 4.75 | 6.25 | ........ | ........ | 5.00 | 8.25 | 4.00 | 4.00 |
| Year | 2.00 | 10.65 | 4.10 | 8.75 | ........ | ........ | 4.00 | 10.00 | 4.00 | 7.00 |

[1] Natives to 1908.

[2] Not including lambs.

## SHEEP AND WOOL—Continued.

### TABLE 170.—*Wool: Product, by States, 1915.*[1]

| State and year. | Number of fleeces. | Average weight of fleece. | Wool product, raw. |
|---|---|---|---|
| | | *Pounds.* | *Pounds.* |
| Maine | 148,000 | 6.3 | 932,000 |
| New Hampshire | 31,000 | 6.3 | 195,000 |
| Vermont | 83,000 | 7.1 | 589,000 |
| Massachusetts | 20,000 | 6.4 | 128,000 |
| Rhode Island | 5,000 | 5.0 | 25,000 |
| Connecticut | 15,000 | 5.5 | 82,000 |
| New York | 535,000 | 6.5 | 3,478,000 |
| New Jersey | 17,000 | 5.6 | 95,000 |
| Pennsylvania | 650,000 | 6.2 | 4,030,000 |
| Delaware | 5,000 | 5.7 | 28,000 |
| Maryland | 127,000 | 5.9 | 749,000 |
| Virginia | 439,000 | 4.7 | 2,063,000 |
| West Virginia | 681,000 | 5.0 | 3,405,000 |
| North Carolina | 145,000 | 3.9 | 566,000 |
| South Carolina | 29,000 | 4.0 | 116,000 |
| Georgia | 200,000 | 2.6 | 520,000 |
| Florida | 107,000 | 3.1 | 332,000 |
| Ohio | 2,110,000 | 6.8 | 14,350,000 |
| Indiana | 725,000 | 6.8 | 4,920,000 |
| Illinois | 530,000 | 7.5 | 3,975,000 |
| Michigan | 1,170,000 | 6.9 | 8,073,000 |
| Wisconsin | 550,000 | 7.2 | 3,960,000 |
| Minnesota | 420,000 | 7.0 | 2,940,000 |
| Iowa | 720,000 | 7.5 | 5,400,000 |
| Missouri | 1,050,000 | 6.7 | 7,035,000 |
| North Dakota | 225,000 | 7.2 | 1,620,000 |
| South Dakota | 500,000 | 7.0 | 3,500,000 |
| Nebraska | 240,000 | 7.4 | 1,776,000 |
| Kansas | 205,000 | 7.1 | 1,456,000 |
| Kentucky | 725,000 | 4.9 | 3,552,000 |
| Tennessee | 435,000 | 4.4 | 1,914,000 |
| Alabama | 106,000 | 3.8 | 403,000 |
| Mississippi | 155,000 | 3.4 | 527,000 |
| Louisiana | 145,000 | 3.7 | 536,000 |
| Texas | 1,600,000 | 5.8 | 9,280,000 |
| Oklahoma | 70,000 | 7.0 | 490,000 |
| Arkansas | 90,000 | 4.5 | 406,000 |
| Montana | 3,725,000 | 7.7 | 28,682,000 |
| Wyoming | 3,630,000 | 8.0 | 29,040,000 |
| Colorado | 1,250,000 | 6.0 | 7,500,000 |
| New Mexico | 3,325,000 | 5.6 | 18,620,000 |
| Arizona | 950,000 | 6.3 | 5,985,000 |
| Utah | 1,800,000 | 7.4 | 13,320,000 |
| Nevada | 765,000 | 7.7 | 5,890,000 |
| Idaho | 1,935,000 | 7.9 | 15,286,000 |
| Washington | 460.000 | 8.3 | 3,818,000 |
| Oregon | 1,950,000 | 8.0 | 15,600,000 |
| California | 1,900,000 | 6.1 | 11,590,000 |
| United States | 36,698,000 | 6.78 | [2]288,777,000 |

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[1] Estimate of United States Department of Agriculture.

[2] Includes pulled wool.

## SHEEP AND WOOL—Continued.

TABLE 171.—*Wool: Wholesale price per pound in Boston, 1900–1915.*

| Date. | Ohio fine, unwashed. | | Kentucky quarter blood, unwashed. | | Ohio XX, washed. | | Ohio half blood combing, washed. | | Ohio Delaine, washed. | | Michigan fine, unwashed.[1] | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Low. | High. | Low. | High. | Low. | High. | Low. | High. | Low. | High. | Low. | High. |
| | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* |
| 1900 | 18 | 26 | 23 | 29 | 27 | 38 | 28 | 39 | 27½ | 40 | 21½ | 29 |
| 1901 | 16½ | 19½ | 19½ | 24 | 26 | 28 | 25 | 29 | 27½ | 30 | 17½ | 21 |
| 1902 | 19 | 23 | 20½ | 24 | 27 | 32 | 26 | 31 | 28 | 35 | 18 | 22 |
| 1903 | 20 | 25 | 22 | 25 | 30 | 35 | 29 | 34 | 33½ | 37 | 21 | 27½ |
| 1904 | 21 | 25 | 24 | 33 | 32 | 36 | 30 | 40 | 34 | 38 | 19 | 22 |
| 1905 | 23 | 30 | 30 | 37 | 34 | 37 | 36 | 43 | 36 | 40 | 20 | 27 |
| 1906 | 24 | 28 | 30 | 34 | 33½ | 36 | 37 | 41 | 35½ | 37½ | 24 | 26½ |
| 1907 | 25 | 28 | 29 | 34 | 33 | 35 | 38 | 41 | 36 | 39 | 23 | 26 |
| 1908 | 19 | 27 | 20 | 30 | 30 | 35 | 31 | 40 | 31 | 39 | 18 | 25 |
| 1909 | 23 | 28 | 27 | 37 | 34 | 38 | 38 | 41 | 37 | 42 | 22 | 26 |
| 1910 | 20 | 28 | 24 | 36 | 30 | 38 | 27 | 41 | 34 | 40 | 19 | 26 |
| 1911 | 18 | 22 | 22½ | 27 | 27 | 32 | 25 | 30 | 29 | 34 | 17 | 21 |
| 1912 | 21 | 25 | 22½ | 33 | 28 | 33 | 26 | 30 | 30 | 35 | 19 | 23 |
| 1913 | 20 | 24 | 23½ | 32 | 25 | 32 | 23 | 29 | 26 | 34 | 19 | 23 |
| 1914 | 20 | 25 | 23½ | 29 | 25½ | 31½ | 23 | 30 | 26 | 32 | 19 | 23 |
| 1915. | | | | | | | | | | | | |
| January | 23 | 25 | 29 | 32 | 29 | 31 | 29 | 32 | 30 | 32 | 22 | 23 |
| February | 25 | 29 | 33 | 37 | 30 | 33 | 31 | 36 | 32 | 36 | 23 | 26 |
| March | 28 | 29 | 37 | 38 | 33 | 34 | 35 | 38 | 35½ | 37 | 26 | 26 |
| April | 26 | 29 | 31 | 38 | 32 | 33 | 34 | 38 | 34 | 36 | 22 | 26 |
| May | 26 | 27 | 36 | 37 | 32 | 32 | 33 | 36 | 32 | 35 | 22 | 23 |
| June | 26 | 27 | 36 | 39 | 32 | 32 | 34 | 35 | 32 | 34 | 22 | 23 |
| July | 26 | 27½ | 38 | 39½ | 32 | 32 | 35 | 36 | 33½ | 35 | 23 | 23 |
| August | 26 | 27½ | 38½ | 39½ | 32 | 32 | 35 | 36 | 34 | 35 | 23 | 24 |
| September | 26 | 27½ | 37 | 39½ | 32 | 32 | 33 | 36 | 34 | 35 | 23 | 27½ |
| October | 25 | 27 | 36 | 37 | 32 | 32½ | 32½ | 34 | 34 | 35 | 23 | 24 |
| November | 25 | 27 | 36 | 38 | 32 | 32½ | 32½ | 34 | 34 | 35 | 23 | 24 |
| December | 26 | 27 | 38 | 38 | 32½ | 32½ | 34 | 35 | 35 | 36 | 25 | 25 |
| Year | 23 | 29 | 29 | 39½ | 29 | 34 | 29 | 38 | 30 | 37 | 22 | 27½ |

| Date. | Fine Territory, staple scoured. | | Fine medium Territory, clothing scoured. | | Texas, 12 months, scoured. | | Fine fall, Texas scoured. | | Pulled, A super, scoured. | | Pulled, B super, scoured. | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Low. | High. | Low. | High. | Low. | High. | Low. | High. | Low. | High. | Low. | High. |
| | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* | *Cts.* |
| 1900 | 49 | 74 | 45 | 62 | 48 | 65 | 40 | 55 | 42 | 57 | 37 | 50 |
| 1901 | 43 | 50 | 35 | 44 | 43 | 50 | 36 | 42 | 35 | 45 | 30 | 38 |
| 1902 | 48 | 59 | 42 | 50 | 48 | 60 | 38 | 48 | 38 | 46 | 33 | 40 |
| 1903 | 52 | 60 | 50 | 58 | 48 | 60 | 44 | 48 | 40 | 47 | 39 | 44 |
| 1904 | 50 | 70 | 50 | 68 | 52 | 68 | 44 | 56 | 43 | 60 | 40 | 55 |
| 1905 | 65 | 78 | 60 | 72 | 63 | 76 | 54 | 63 | 55 | 65 | 52 | 60 |
| 1906 | 70 | 78 | 65 | 70 | 72 | 76 | 58 | 63 | 53 | 69 | 47 | 56 |
| 1907 | 70 | 75 | 66 | 73 | 70 | 75 | 50 | 62 | 45 | 60 | 38 | 52 |
| 1908 | 53 | 72 | 43 | 62 | 50 | 72 | 42 | 53 | 42 | 55 | 32 | 45 |
| 1909 | 62 | 80 | 60 | 72 | 60 | 78 | 45 | 62 | 47 | 65 | 38 | 58 |
| 1910 | 60 | 80 | 54 | 68 | 55 | 75 | 48 | 62 | 50 | 65 | 45 | 58 |
| 1911 | 53 | 62 | 51 | 60 | 46 | 60 | 41 | 50 | 45 | 55 | 41 | 47 |
| 1912 | 60 | 67 | 48 | 59 | 52 | 65 | 42 | 48 | 45 | 58 | 41 | 54 |
| 1913 | 51 | 67 | 46 | 59 | 50 | 65 | 41 | 50 | 42 | 58 | 36 | 54 |
| 1914 | 51 | 65 | 46 | 57 | 50 | 62 | 41 | 50 | 43 | 55 | 36 | 56 |
| 1915. | | | | | | | | | | | | |
| January | 62 | 66 | 55 | 59 | 56 | 60 | 42 | 52 | 56 | 59 | 57 | 63 |
| February | 67 | 75 | 60 | 68 | 64 | 73 | 53 | 58 | 57 | 62 | 58 | 72 |
| March | 72 | 75 | 65 | 68 | 71 | 75 | 58 | 60 | 60 | 68 | 65 | 74 |
| April | 70 | 73 | 65 | 68 | 70 | 73 | 58 | 60 | 61 | 65 | 58 | 65 |
| May | 68 | 70 | 63 | 68 | 65 | 70 | 54 | 60 | 60 | 63 | 57 | 63 |
| June | 68 | 70 | 63 | 65 | 65 | 68 | 54 | 55 | 63 | 65 | 60 | 65 |
| July | 70 | 73 | 63 | 65 | 66 | 70 | 54 | 57 | 63 | 65 | 60 | 65 |
| August | 71 | 74 | 65 | 65 | 68 | 70 | 55 | 57 | 63 | 65 | 60 | 65 |
| September | 72 | 74 | 65 | 65 | 68 | 70 | 55 | 57 | 60 | 65 | 58 | 65 |
| October | 70 | 73 | 65 | 65 | 66 | 68 | 55 | 57 | 60 | 65 | 55 | 63 |
| November | 70 | 73 | 62 | 65 | 65 | 67 | 55 | 57 | 60 | 66 | 55 | 64 |
| December | 73 | 75 | 65 | 68 | 65 | 70 | 54 | 56 | 62 | 66 | 59 | 64 |
| Year | 62 | 75 | 56 | 68 | 56 | 75 | 42 | 60 | 56 | 68 | 55 | 74 |

[1] Quoted as X, washed, in 1900.

## SHEEP AND WOOL—Continued.

### TABLE 172 —*Wool: Wholesale price per pound, 1900–1915*

| Date. | Boston. |  | Philadelphia. |  | St. Louis |  |
|---|---|---|---|---|---|---|
|  | Ohio XX, washed. |  | Ohio XX, washed [1] |  | Best tub, washed. |  |
|  | Low. | High. | Low. | High. | Low | High |
|  | *Cts* | *Cts* | *Cts* | *Cts.* | *Cts.* | *Cts.* |
| 1900.. | 27 | 38 | 27 | 37 | 28 | 36 |
| 1901.. | 26 | 28 | 25 | 28 | 24 | 29½ |
| 1902. | 27 | 32 | 26 | 32 | 24 | 29 |
| 1903 | 30 | 35 | 30 | 34 | 27 | 31 |
| 1904 | 32 | 36 | 31½ | 33½ | 30½ | 41 |
| 1905 | 34 | 37 | 34 | 36 | 37 | 43 |
| 1906 | 33½ | 36 | 33 | 35 | 31 | 40 |
| 1907. | 33 | 35 | 33 | 34 | 33 | 38 |
| 1908.. | 30 | 35 | 30 | 34 | 22 | 33 |
| 1909. | 34 | 38 | 32 | 35 | 30 | 38 |
| 1910 | 30 | 38 | 30 | 35 | 31 | 37 |
| 1911. | 27 | 32 | 27 | 31 | 28 | 33 |
| 1912. | 28 | 33 | 25 | 31 | 27 | 38 |
| 1913 | 25 | 32 | 22 | 31 | 28 | 37 |
| 1914 | 25½ | 31½ | 22 | 29 | 28 | 33 |
| 1915 |  |  |  |  |  |  |
| January... | 29 | 31 | 29 | 31 | 31 | 34 |
| February.. | 25 | 29 | 30 | 33 | 33 | 40 |
| March ... | 33 | 34 | 33 | 34 | 40 | 40 |
| April.... | 34 | 38 | 31 | 33½ | 37 | 40 |
| May .. | 32 | 32 | 31 | 32 | 38 | 41 |
| June.. . | 32 | 32 | 31 | 32½ | 40 | 41 |
| July.... | 32 | 32 | 28 | 32½ | 40 | 42 |
| August. . | 32 | 32 | 29 | 32 | 40 | 42 |
| September. | 32 | 32 | 31 | 32 | 40 | 42 |
| October | 32 | 32 | 31 | 32 | 40 | 42 |
| November.. | 32 | 32½ | 31½ | 32½ | 40 | 42 |
| December. | 32½ | 32½ | 32 | 33½ | 40 | 44 |
| Year | 25 | 38 | 28 | 34 | 31 | 44 |

[1] One-fourth to three-eighths unwashed, 1912–1914

### TABLE 173 —*Wool International trade, calendar years 1912–1914.*

["Wool" in this table includes. Washed, unwashed, scoured, and pulled wool: slipe, sheep's wool on skins (total weight of wool and skins taken), and all other animal fibers included in United States classification of wool. The following items have been considered as not within this classification: Corded, combed, and dyed wool, flocks, goatskins with hair on, mill waste, noils, and tops. See "General note," p.417 ]

EXPORTS

[000 omitted ]

| Country | 1912 | 1913 | 1914 (prelim.) | Country | 1912 | 1913 | 1914 (prelim.) |
|---|---|---|---|---|---|---|---|
|  | *Pounds* | *Pounds* | *Pounds.* |  | *Pounds* | *Pounds.* | *Pounds.* |
| Algeria . | 11,635 | 11,635 |  | New Zealand....... | 195,030 | 193,338 | ......... |
| Argentina.. ... | 363,680 | 264,728 | 258,533 | Persia [1].. | 9,438 | [2]9,438 | ........ |
| Australia..... . | 693,496 | 603,271 | 414,286 | Peru.......... . . | 7,670 | 9,770 | 10,665 |
| Belgium... . | 246,687 | 218,193 | . . | Russia...... .. . | 42,014 | 38,200 | 16,431 |
| British India.... | 53,686 | 51,031 | 44,705 | Spain.. ... .... | 24,987 | 31,937 | 27,810 |
| British South Africa | 185,471 | 194,343 | 152,851 | Turkey [3]. . . . | 24,084 | 24,084 | .......... |
| Chile ......... | 27,366 | 28,418 | 27,043 | United Kingdom... | 48,554 | 29,079 | 38,848 |
| China... . .... | 41,670 | 43,327 | 44,821 | Uruguay.. . .... | 178,441 | [2]178,441 | 96,296 |
| France.. ....... | 88,990 | 79,600 | . . | Other countries.... | 34,786 | 33,343 | .......... |
| Germany......... | 49,743 | 47,774 | . |  |  |  |  |
| Netherlands....... | 31,851 | 30,173 | . . | Total........ | 2,359,279 | 2,120,123 | .......... |

[1] Year beginning Mar. 21 [2] Year preceding [3] Data for year beginning Mar. 14, 1910.

## SHEEP AND WOOL—Continued.

### TABLE 173.—*Wool: International trade, calendar years 1912–1914*—Continued.

### IMPORTS.

| Country. | 1912 | 1913 | 1914 (prelim.). |
|---|---|---|---|
| | *Pounds.* | *Pounds.* | *Pounds.* |
| Austria-Hungary | 67,425 | 58,650 | .......... |
| Belgium | 345,758 | 329,074 | .......... |
| British India | 26,066 | 29,116 | 22,749 |
| Canada | 8,836 | 8,587 | 9,518 |
| France | 579,624 | 593,781 | .......... |
| Germany | 517,120 | 481,571 | .......... |
| Japan | 13,451 | 11,741 | .......... |
| Netherlands | 37,681 | 38,419 | .......... |
| Russia | 99,431 | 121,691 | 64,172 |
| Sweden | 6,703 | 6,022 | .......... |
| Switzerland | 11,295 | 10,444 | .......... |
| United Kingdom | 555,161 | 582,618 | 498,192 |
| United States | 238,118 | 130,183 | 260,193 |
| Other countries | 64,845 | 64,843 | .......... |
| Total | 2,571,514 | 2,466,740 | .......... |

## SWINE.

### TABLE 174.—*Swine: Number and value on farms in the United States, 1867–1916.*

NOTE.—Figures in *italics* are census returns; figures in roman are estimates of the Department of Agriculture. Estimates of numbers are obtained by applying estimated percentages of increase or decrease to the published numbers of the preceding year, except that a revised base is used for applying percentage estimates whenever new census data are available. It should also be observed that the census of 1910, giving numbers as of Apr. 15, is not strictly comparable with former censuses, which related to numbers June 1.

| Jan. 1— | Number. | Price per head. | Farm value. |
|---|---|---|---|
| 1867 | 24,694,000 | $4.03 | $99,637,000 |
| 1868 | 24,317,000 | 3.29 | 79,976,000 |
| 1869 | 23,316,000 | 4.65 | 108,431,000 |
| 1870 | 26,751,000 | 5.80 | 155,108,000 |
| *1870, census, June 1* | *25,134,569* | .......... | .............. |
| 1871 | 29,458,000 | 5.61 | 165,312,000 |
| 1872 | 31,796,000 | 4.01 | 127,453,000 |
| 1873 | 32,632,000 | 3.67 | 119,632,000 |
| 1874 | 30,861,000 | 3.98 | 122,695,000 |
| 1875 | 28,062,000 | 4.80 | 134,581,000 |
| 1876 | 25,727,000 | 6.00 | 154,251,000 |
| 1877 | 28,077,000 | 5.66 | 158,873,000 |
| 1878 | 32,262,000 | 4.85 | 156,577,000 |
| 1879 | 34,766,000 | 3.18 | 110,508,000 |
| 1880 | 34,034,000 | 4.28 | 145,782,000 |
| *1880, census, June 1* | *47,681,700* | .......... | .............. |
| 1881 | 36,248,000 | 4.70 | 170,535,000 |
| 1882 | 44,122,000 | 5.97 | 263,543,000 |
| 1883 | 43,270,000 | 6.75 | 291,951,000 |
| 1884 | 44,201,000 | 5.57 | 246,301,000 |
| 1885 | 45,143,000 | 5.02 | 226,402,000 |
| 1886 | 46,092,000 | 4.26 | 196,570,000 |
| 1887 | 44,613,000 | 4.48 | 200,043,000 |
| 1888 | 44,347,000 | 4.98 | 220,811,000 |
| 1889 | 50,302,000 | 5.79 | 291,307,000 |
| 1890 | 51,603,000 | 4.72 | 243,418,000 |
| *1890, census, June 1* | *57,409,583* | .......... | .............. |
| 1891 | 50,625,000 | $4.15 | $210,194,000 |
| 1892 | 52,398,000 | 4.60 | 241,031,000 |
| 1893 | 46,095,000 | 6.41 | 295,426,000 |
| 1894 | 45,206,000 | 5.98 | 270,385,000 |
| 1895 | 44,166,000 | 4.97 | 219,501,000 |
| 1896 | 42,843,000 | 4.35 | 186,530,000 |
| 1897 | 40,600,000 | 4.10 | 166,273,000 |
| 1898 | 39,760,000 | 4.39 | 174,351,000 |
| 1899 | 38,652,000 | 4.40 | 170,110,000 |
| 1900 | 37,079,000 | 5.00 | 185,472,000 |
| *1900, census, June 1* | *62,868,041* | .......... | .............. |
| 1901 [1] | 56,982,000 | 6.20 | 353,012,000 |
| 1902 | 48,699,000 | 7.03 | 342,121,000 |
| 1903 | 46,923,000 | 7.78 | 364,974,000 |
| 1904 | 47,009,000 | 6.15 | 289,225,000 |
| 1905 | 47,321,000 | 5.99 | 283,255,000 |
| 1906 | 52,103,000 | 6.18 | 321,803,000 |
| 1907 | 54,794,000 | 7.62 | 417,791,000 |
| 1908 | 56,084,000 | 6.05 | 339,030,000 |
| 1909 | 54,147,000 | 6.55 | 354,794,000 |
| 1910 | 47,782,000 | .......... | .............. |
| *1910, census, Apr. 1* | *58,185,676* | 9.17 | 533,309,000 |
| 1911 [1] | 65,620,000 | 9.37 | 615,170,000 |
| 1912 | 65,410,000 | 8.00 | 523,328,000 |
| 1913 | 61,178,000 | 9.86 | 603,109,000 |
| 1914 | 58,933,000 | 10.40 | 612,951,000 |
| 1915 | 64,618,000 | 9.87 | 637,479,000 |
| 1916 | 68,047,000 | 8.40 | 571,890,000 |

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[1] Estimates of numbers revised, based on census data.

## SWINE—Continued.

TABLE 175.—*Swine: Number and value on farms Jan. 1, 1915 and 1916, by States.*

| State. | Number (thousands) Jan. 1— | | Average price per head Jan. 1— | | Farm value (thousands of dollars) Jan. 1— | |
|---|---|---|---|---|---|---|
| | 1916 | 1915 | 1916 | 1915 | 1916 | 1915 |
| Maine | 102 | 95 | $12.00 | $15.70 | $1,224 | $1,492 |
| New Hampshire | 55 | 52 | 12.50 | 14.00 | 688 | 728 |
| Vermont | 113 | 108 | 10.30 | 13.00 | 1,164 | 1,404 |
| Massachusetts | 112 | 108 | 13.20 | 15.50 | 1,478 | 1,674 |
| Rhode Island | 15 | 15 | 11.00 | 13.50 | 165 | 202 |
| Connecticut | 59 | 58 | 13.60 | 15.50 | 802 | 899 |
| New York | 799 | 768 | 11.80 | 14.30 | 9,428 | 10,982 |
| New Jersey | 161 | 161 | 12.80 | 14.00 | 2,061 | 2,254 |
| Pennsylvania | 1,210 | 1,186 | 10.40 | 13.50 | 12,584 | 16,011 |
| Delaware | 61 | 60 | 9.00 | 10.20 | 549 | 612 |
| Maryland | 359 | 349 | 8.50 | 9.70 | 3,052 | 3,385 |
| Virginia | 1,023 | 956 | 7.00 | 7.90 | 7,161 | 7,552 |
| West Virginia | 378 | 374 | 9.00 | 9.60 | 3,402 | 3,590 |
| North Carolina | 1,601 | 1,525 | 7.80 | 8.20 | 12,488 | 12,505 |
| South Carolina | 917 | 819 | 8.50 | 8.60 | 7,794 | 7,043 |
| Georgia | 2,348 | 2,012 | 7.70 | 8.00 | 18,080 | 16,096 |
| Florida | 996 | 949 | 6.00 | 6.00 | 5,976 | 5,694 |
| Ohio | 3,713 | 3,640 | 9.00 | 11.20 | 33,417 | 40,768 |
| Indiana | 4,167 | 4,167 | 8.50 | 10.30 | 35,420 | 42,920 |
| Illinois | 4,489 | 4,358 | 9.00 | 10.30 | 40,401 | 44,887 |
| Michigan | 1,462 | 1,392 | 9.00 | 10.90 | 13,158 | 15,173 |
| Wisconsin | 2,142 | 2,255 | 9.00 | 12.00 | 19,278 | 27,060 |
| Minnesota | 1,716 | 1,716 | 9.50 | 12.50 | 16,302 | 21,450 |
| Iowa | 9,069 | 8,720 | 9.30 | 11.00 | 84,342 | 95,920 |
| Missouri | 4,505 | 4,250 | 7.10 | 8.10 | 31,986 | 34,425 |
| North Dakota | 706 | 642 | 9.00 | 11.80 | 6,354 | 7,576 |
| South Dakota | 1,314 | 1,195 | 10.10 | 11.00 | 13,271 | 13,145 |
| Nebraska | 4,266 | 3,809 | 9.40 | 10.90 | 40,100 | 41,518 |
| Kansas | 2,815 | 2,656 | 9.10 | 10.10 | 25,616 | 26,826 |
| Kentucky | 1,709 | 1,582 | 6.50 | 7.20 | 11,108 | 11,390 |
| Tennessee | 1,531 | 1,501 | 6.80 | 7.80 | 10,411 | 11,708 |
| Alabama | 1,715 | 1,559 | 7.60 | 7.80 | 13,034 | 12,160 |
| Mississippi | 1,617 | 1,540 | 6.20 | 7.20 | 10,025 | 11,088 |
| Louisiana | 1,553 | 1,412 | 7.30 | 7.70 | 11,337 | 10,872 |
| Texas | 3,197 | 2,880 | 7.70 | 9.00 | 24,617 | 25,920 |
| Oklahoma | 1,491 | 1,420 | 7.20 | 8.20 | 10,735 | 11,644 |
| Arkansas | 1,589 | 1,573 | 5.40 | 6.50 | 8,581 | 10,224 |
| Montana | 298 | 276 | 9.00 | 10.80 | 2,682 | 2,981 |
| Wyoming | 70 | 64 | 9.40 | 11.40 | 658 | 730 |
| Colorado | 320 | 256 | 8.20 | 10.50 | 2,624 | 2,688 |
| New Mexico | 91 | 73 | 9.00 | 9.80 | 819 | 715 |
| Arizona | 40 | 31 | 11.00 | 12.00 | 440 | 372 |
| Utah | 112 | 98 | 7.80 | 10.20 | 874 | 1,000 |
| Nevada | 40 | 36 | 9.00 | 11.60 | 360 | 418 |
| Idaho | 344 | 328 | 7.00 | 10.00 | 2,408 | 3,280 |
| Washington | 314 | 327 | 8.50 | 11.10 | 2,669 | 3,630 |
| Oregon | 396 | 360 | 7.10 | 9.50 | 2,812 | 3,420 |
| California | 947 | 877 | 8.40 | 10.50 | 7,955 | 9,208 |
| United States | 68,047 | 64,618 | 8.40 | 9.87 | 571,890 | 637,479 |

## SWINE—Continued.

TABLE 176.—*Hogs (live): Wholesale price per 100 pounds, 1900–1915.*

| Date. | Cincinnati. | | St. Louis. | | Chicago. | | Kansas City. | | Omaha. | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Packing, fair to good. | | Mixed packers. | | Mixed and packers. | | | | | |
| | Low. | High. | Low. | High. | Low. | High. | Low. | High. | Low. | High. |
| 1900 | $4.45 | $5.85 | $4.40 | $5.75 | $4.05 | $5.82½ | $4.40 | $5.67½ | $4.15 | $5.62 |
| 1901 | 5.15 | 7.20 | 4.90 | 7.10 | 4.85 | 7.30 | 5.05 | 7.12½ | 4.45 | 6.85 |
| 1902 | 5.85 | 8.00 | 5.80 | 8.20 | 5.65 | 8.20 | 6.10 | 8.17½ | 5.25 | 8.05 |
| 1903 | 4.15 | 7.75 | 4.20 | 7.60 | 3.90 | 7.80 | 4.35 | 7.60 | 4.10 | 7.55 |
| 1904 | 4.35 | 6.25 | 4.25 | 6.30 | 4.15 | 6.37½ | 4.47½ | 6.07½ | 4.20 | 6.05 |
| 1905 | 4.60 | 6.35 | 4.75 | 6.35 | 4.25 | 6.42½ | 4.55 | 6.25 | 4.30 | 6.10 |
| 1906 | 5.30 | 6.95 | 5.10 | 6.97 | 4.95 | 7.10 | 5.20 | 6.87½ | 4.85 | 6.75 |
| 1907 | 4.15 | 7.40 | 4.00 | 7.22 | 3.75 | 7.22½ | 4.00 | 7.15 | 3.80 | 7.05 |
| 1908 | 4.15 | 7.35 | 4.20 | 7.35 | 4.00 | 7.50 | 4.00 | 7.15 | 3.97 | 6.90 |
| 1909 | 5.75 | 8.80 | 5.75 | 8.65 | 5.50 | 8.70 | 5.25 | 8.50 | 5.25 | 8.50 |
| 1910 | 6.95 | 11.10 | 6.80 | 11.05 | 6.60 | 11.15 | 6.90 | 10.90 | 7.26 | 10.85 |
| 1911 | 5.75 | 8.25 | 5.80 | 8.22 | 5.55 | 8.30 | 5.60 | 8.05 | 5.59 | 8.10 |
| 1912 | 6.10 | 9.35 | 5.75 | 9.25 | 5.75 | 9.40 | 5.65 | 9.05 | 7.00 | 9.00 |
| 1913 | 7.35 | 10.00 | 7.20 | 9.50 | 6.95 | 9.62½ | 6.95 | 9.25 | 7.02 | 9.15 |
| 1914 | 6.40 | 9.90 | 6.80 | 10.00 | 6.30 | 10.15 | 6.65 | 9.75 | 6.50 | 9.35 |
| 1915. | | | | | | | | | | |
| January | 6.65 | 7.35 | ........ | ........ | 6.15 | 7.40 | 6.50 | 7.40 | 6.00 | 7.95 |
| February | 6.70 | 7.15 | ........ | ........ | 6.30 | 7.25 | 6.35 | 7.02½ | 6.25 | 6.95 |
| March | 6.50 | 7.50 | ........ | ........ | 6.35 | 7.05 | 6.50 | 7.05 | 6.35 | 6.82 |
| April | 7.25 | 8.00 | ........ | ........ | 6.60 | 7.85 | 6.60 | 7.65 | 6.40 | 7.50 |
| May | 7.55 | 7.95 | ........ | ........ | 7.10 | 7.95 | 7.20 | 7.90 | 7.00 | 7.60 |
| June | 7.45 | 7.95 | ........ | ........ | 7.05 | 7.92½ | 7.20 | 7.85 | 6.75 | 7.60 |
| July | 7.35 | 8.00 | ........ | ........ | 6.15 | 8.10 | 7.00 | 7.80 | 5.90 | 7.65 |
| August | 7.10 | 7.75 | ........ | ........ | 5.90 | 8.00 | 6.30 | 7.70 | 5.90 | 7.60 |
| September | 7.35 | 8.45 | ........ | ........ | 6.15 | 8.45 | 7.10 | 8.25 | 6.00 | 8.95 |
| October | 7.00 | 8.70 | ........ | ........ | 6.25 | 8.95 | 6.90 | 8.65 | 6.75 | 8.90 |
| November | 6.35 | 7.70 | ........ | ........ | 5.80 | 7.75 | 6.20 | 7.50 | 6.00 | 7.35 |
| December | 6.25 | 7.25 | ........ | ........ | 5.80 | 7.05 | 6.00 | 6.75 | 4.00 | 8.00 |
| Year | 6.25 | 8.70 | ........ | ........ | 5.80 | 8.95 | 6.00 | 8.65 | 4.00 | 8.95 |

## THE FEDERAL MEAT INSPECTION.

Some of the principal facts connected with the Federal meat inspection as administered by the Bureau of Animal Industry are shown in the following tables. The figures cover the annual totals for the fiscal years 1907 to 1914, inclusive, the former being the first year of operations under the meat-inspection law now in force. The data given comprise the number of establishments at which inspection is conducted; the number of animals of each species inspected at slaughter; the number of each species condemned, both wholly and in part, and the percentage condemned of each species and of all animals; the quantity of meat products prepared or processed under Federal supervision, and the quantity and percentage of the latter condemned.

Further details of the Federal meat inspection are published each year in the Annual Report of the Chief of the Bureau of Animal Industry.

TABLE 177.—*Number of establishments and total number of animals inspected at slaughter under Federal inspection annually, 1907 to 1915.*

| Fiscal year. | Establishments. | Cattle. | Calves. | Swine. | Sheep. | Goats. | All animals. |
|---|---|---|---|---|---|---|---|
| 1907 | 708 | 7,621,717 | 1,763,574 | 31,815,900 | 9,681,876 | 52,149 | 50,935,216 |
| 1908 | 787 | 7,116,275 | 1,995,487 | 35,113,077 | 9,702,545 | 45,953 | 53,973,337 |
| 1909 | 876 | 7,325,337 | 2,046,711 | 35,427,931 | 10,802,903 | 69,193 | 55,672,075 |
| 1910 | 919 | 7,962,189 | 2,295,099 | 27,656,021 | 11,149,937 | 115,811 | 49,179,057 |
| 1911 | 936 | 7,781,030 | 2,219,908 | 29,916,363 | 13,005,502 | 54,145 | 52,976,948 |
| 1912 | 940 | 7,532,005 | 2,242,929 | 34,966,378 | 14,208,724 | 63,983 | 59,014,019 |
| 1913 | 910 | 7,155,816 | 2,098,484 | 32,287,538 | 14,724,465 | 56,556 | 56,322,859 |
| 1914 | 893 | 6,724,117 | 1,814,904 | 33,289,705 | 14,958,834 | 121,827 | 56,909,387 |
| 1915 | 896 | 6,964,402 | 1,735,902 | 36,247,958 | 12,909,089 | 165,533 | 58,022,884 |

TABLE 178.—*Condemnation of animals at slaughter, 1907 to 1915.*

| Fiscal year. | Cattle. | | | Calves. | | | Swine. | | |
|---|---|---|---|---|---|---|---|---|---|
| | Whole.[1] | Part. | Per cent.[2] | Whole.[1] | Part. | Per cent.[2] | Whole.[1] | Part. | Per cent.[2] |
| 1907 | 28,497 | 93,174 | 1.60 | 6,462 | 245 | 0.38 | 176,280 | 436,161 | 1.92 |
| 1908 | 34,960 | 67,482 | 1.44 | 5,858 | 396 | .31 | 234,608 | 636,589 | 2.48 |
| 1909 | 37,544 | 99,739 | 1.87 | 8,217 | 409 | .42 | 183,926 | 799,300 | 2.77 |
| 1910 | 45,588 | 122,167 | 2.11 | 7,531 | 500 | .35 | 123,421 | 726,829 | 3.07 |
| 1911 | 42,578 | 123,969 | 2.14 | 7,656 | 781 | .38 | 138,977 | 877,528 | 3.40 |
| 1912 | 54,778 | 134,783 | 2.52 | 8,945 | 1,212 | .45 | 276,512 | 323,992 | 1.72 |
| 1913 | 56,736 | 130,139 | 2.61 | 9,267 | 1,377 | .51 | 319,131 | 373,993 | 2.15 |
| 1914 | 54,417 | 138,085 | 2.86 | 6,733 | 1,234 | .44 | 352,921 | 422,275 | 2.33 |
| 1915 | 61,279 | 178,409 | 3.44 | 5,975 | 1,750 | .45 | 328,667 | 464,217 | 2.19 |

| Fiscal year. | Sheep. | | | Goats. | | | All animals. | | |
|---|---|---|---|---|---|---|---|---|---|
| | Whole.[1] | Part. | Per cent.[2] | Whole.[1] | Part. | Per cent.[2] | Whole.[1] | Part. | Per cent.[2] |
| 1907 | 9,676 | 296 | 0.10 | 43 | .......... | 0.08 | 220,958 | 529,876 | 1.47 |
| 1908 | 8,186 | 198 | .09 | 33 | 1 | .07 | 283,645 | 704,666 | 1.83 |
| 1909 | 10,825 | 179 | .10 | 82 | 1 | .12 | 240,594 | 899,628 | 2.05 |
| 1910 | 11,156 | 24,714 | .32 | 226 | 1 | .19 | 187,922 | 874,211 | 2.16 |
| 1911 | 10,821 | 7,394 | .14 | 61 | .......... | .11 | 200,093 | 1,009,672 | 2.28 |
| 1912 | 16,304 | 3,871 | .14 | 85 | 1 | .13 | 356,624 | 463,859 | 1.39 |
| 1913 | 18,612 | 939 | .13 | 78 | 1 | .14 | 403,824 | 506,449 | 1.62 |
| 1914 | 21,402 | 1,564 | .15 | 776 | 8 | .64 | 436,249 | 563,166 | 1.76 |
| 1915 | 18,298 | 298 | .14 | 657 | 14 | .41 | 414,876 | 644,688 | 1.83 |

[1] Includes carcasses passed for rendering into lard or tallow as well as those condemned outright.

[2] Includes both whole and parts; that is, the percentage given is of all carcasses the meat of which has been condemned in whole or in part.

TABLE 179.—*Quantity of meat and meat food products prepared, and quantity and percentage condemned, under Federal supervision annually, 1907 to 1915.*

| Fiscal year. | Prepared or processed. | Condemned. | Percentage condemned. |
|---|---|---|---|
| | *Pounds.* | *Pounds.* | |
| 1907 | 4,464,213,208 | 14,874,587 | 0.33 |
| 1908 | 5,958,298,364 | 43,344,206 | .73 |
| 1909 | 6,791,437,032 | 24,679,754 | .36 |
| 1910 | 6,223,964,593 | 19,031,808 | .31 |
| 1911 | 6,934,233,214 | 21,073,577 | .31 |
| 1912 | 7,279,558,956 | 18,096,587 | .25 |
| 1913 | 7,094,809,809 | 18,851,930 | .27 |
| 1914 | 7,033,295,975 | 19,135,469 | .27 |
| 1915 | 7.533.070.002 | 18.780.122 | .25 |

The principal items in the above table, in the order of magnitude, are: Cured pork, lard, lard substitute, sausage, and oleo products. The list includes a large number of less important items.

It should be understood that the above products are entirely separate and additional to the carcass inspection at time of slaughter. They are, in fact, reinspections of such portions of the carcass as have subsequently undergone some process of manufacture.

### Table 180.—*Estimated value of farm products.*

[Based on prices at the farm.]

| Year. | Total, gross. | Crops. | | Animals and animal products. | |
|---|---|---|---|---|---|
| | | Value. | Percentage of total. | Value. | Percentage of total. |
| 1879 (census) | $2,212,540,927 | | | | |
| 1889 (census) | 2,460,107,454 | | | | |
| 1897 | 3,960,821,685 | $2,519,082,592 | 63.6 | $1,441,739,093 | 36.4 |
| 1898 | 4,338,945,829 | 2,759,569,547 | 63.6 | 1,579,376,282 | 36.4 |
| 1899 (census) | 4,717,069,973 | 2,998,704,412 | 63.6 | 1,718,365,561 | 36.4 |
| 1900 | 5,009,595,006 | 3,191,941,763 | 63.7 | 1,817,653,243 | 36.3 |
| 1901 | 5,302,120,039 | 3,385,179,114 | 63.8 | 1,916,940,925 | 36.2 |
| 1902 | 5,594,645,072 | 3,578,416,465 | 64.0 | 2,016,228,607 | 36.0 |
| 1903 | 5,887,170,104 | 3,771,653,816 | 64.1 | 2,115,516,288 | 35.9 |
| 1904 | 6,121,778,001 | 3,981,675,866 | 65.0 | 2,140,102,135 | 35.0 |
| 1905 | 6,273,997,362 | 4,012,652,758 | 64.0 | 2,261,344,604 | 36.0 |
| 1906 | 6,764,210,423 | 4,263,134,353 | 63.0 | 2,501,076,070 | 37.0 |
| 1907 | 7,487,988,622 | 4,761,111,839 | 63.6 | 2,726,876,783 | 36.4 |
| 1908 | 7,890,625,522 | 5,098,292,549 | 64.6 | 2,792,332,973 | 35.4 |
| 1909 (census) | 8,558,161,223 | 5,487,161,223 | 64.1 | 3,071,000,000 | 35.9 |
| 1910 | 9,037,390,744 | 5,486,373,550 | 60.7 | 3,551,017,194 | 39.3 |
| 1911 | 8,819,174,959 | 5,562,058,150 | 63.1 | 3,257,116,809 | 36.9 |
| 1912 | 9,342,790,149 | 5,842,220,449 | 62.5 | 3,500,569,700 | 37.5 |
| 1913 | 9,849,512,511 | 6,132,758,962 | 62.3 | 3,716,753,549 | 37.7 |
| 1914 | 9,894,960,531 | 6,111,684,020 | 61.8 | 3,783,276,511 | 38.2 |
| 1915 preliminary | 10,501,686,375 | 6,652,288,634 | 63.3 | 3,849,397,741 | 36.7 |

### Table 181.—*Tonnage carried on railways in the United States, 1912–1914.*[1]

| Product. | Year ending June 30— | | |
|---|---|---|---|
| | 1912 | 1913 | 1914 |
| FARM PRODUCTS. | | | |
| Animal matter: | *Short tons.* | *Short tons.* | *Short tons.* |
| Animals, live | 14,147,000 | 15,042,000 | 14,811,000 |
| Packing-house products— | | | |
| Dressed meats | 2,346,000 | 2,407,000 | 2,283,000 |
| Hides (including leather) | 1,139,000 | 1,121,000 | 1,081,000 |
| Other packing-house products | 2,360,000 | 2,345,000 | 2,375,000 |
| Total packing-house products | 5,845,000 | 5,873,000 | 5,739,000 |
| Poultry (including game and fish) | 768,000 | 847,000 | 915,000 |
| Wool | 407,000 | 398,000 | 409,000 |
| Other animal matter | 3,807,000 | 4,286,000 | 5,264,000 |
| Total animal matter | 24,974,000 | 26,446,000 | 27,138,000 |
| Vegetable matter: | | | |
| Cotton | 4,953,000 | 3,942,000 | 4,141,000 |
| Fruit and vegetables | 12,880,000 | 16,099,000 | 16,795,000 |
| Grain and grain products— | | | |
| Grain | 39,299,000 | 50,945,000 | 46,015,000 |
| Grain products— | | | |
| Flour | 8,629,000 | 9,523,000 | 9,697,000 |
| Other grain products | 7,081,000 | 7,830,000 | 7,824,000 |
| Total grain and grain products | 55,009,000 | 68,298,000 | 63,536,000 |
| Hay | 6,828,000 | 7,145,000 | 7,319,000 |
| Sugar | 3,233,000 | 3,599,000 | 3,926,000 |
| Tobacco | 982,000 | 1,091,000 | 1,071,000 |
| Other vegetable matter | 10,125,000 | 9,493,000 | 9,338,000 |
| Total vegetable matter | 94,010,000 | 109,667,000 | 106,126,000 |
| Total farm products | 118,984,000 | 136,113,000 | 133,264,000 |
| OTHER FREIGHT. | | | |
| Products of mines | 566,538,000 | 670,940,000 | 626,076,000 |
| Products of forests | 100,148,000 | 112,079,000 | 110,878,000 |
| Manufactures | 136,716,000 | 161,933,000 | 145,257,000 |
| All other (including all freight in less than carload lots) | 75,897,000 | 83,775,000 | 78,649,000 |
| Total tonnage | 998,283,000 | 1,144,840,000 | 1,094,124,000 |

freight r
tively s
$100,000 a year).

## IMPORTS AND EXPORTS OF AGRICULTURAL PRODUCTS.[1]

[Compiled from reports of the foreign commerce and navigation of the United States, U. S. Department of Commerce.]

### TABLE 182.—*Agricultural imports of the United States during the 3 years ending June 30, 1915.*

| Article imported. | Year ending June 30— | | | | | |
|---|---|---|---|---|---|---|
| | 1913 | | 1914 | | 1915 (preliminary). | |
| | Quantity. | Value. | Quantity. | Value. | Quantity. | Value. |
| ANIMAL MATTER. | | | | | | |
| Animals, live: | | | | | | |
| Cattle— | | | | | | |
| For breeding purposes, number | 1,388 | $234,489 | 718,352 | $16,328,819 | 538,167 | $17,513,175 |
| Other.......... number | 420,261 | 6,406,179 | 150,016 | 2,367,899 | .......... | .......... |
| Total cattle....... do | 421,649 | 6,640,668 | 868,368 | 18,696,718 | 538,167 | 17,513,175 |
| Horses— | | | | | | |
| For breeding purposes, number | 5,713 | 1,653,713 | 4,406 | 1,476,905 | 1,849 | 473,138 |
| Other.......... number | 4,295 | 472,162 | 28,613 | 1,128,124 | 10,803 | 504,242 |
| Total horses...... do | 10,008 | 2,125,875 | 33,019 | 2,605,029 | 12,652 | 977,380 |
| Sheep— | | | | | | |
| For breeding purposes, number | 388 | 8,903 | 221,836 | 516,912 | 153,317 | 533,967 |
| Other.......... number | 15,040 | 81,118 | 1,883 | 15,492 | .......... | .......... |
| Total sheep....... do | 15,428 | 90,021 | 223,719 | 532,404 | 153,317 | 533,967 |
| All other, including fowls | .......... | 729,227 | .......... | 2,877,960 | .......... | 3,254,559 |
| Total live animals | .......... | 9,585,791 | .......... | 24,712,111 | .......... | 22,279,081 |
| Beeswax.......... pounds | 828,793 | 253,867 | 1,412,200 | 476,364 | .......... | .......... |
| Dairy products: | | | | | | |
| Butter.......... do | 1,162,253 | 304,090 | 7,842,022 | 1,753,461 | 3,828,227 | 977,262 |
| Cheese.......... do | 49,387,944 | 9,185,184 | 63,784,313 | 11,010,693 | 50,138,520 | 9,370,048 |
| Cream.......... gallons | 1,247,083 | 1,068,109 | 1,773,152 | 1,549,549 | 2,077,384 | 1,800,180 |
| Milk | .......... | 135,724 | .......... | 1,089,440 | .......... | 2,556,787 |
| Total dairy products | .......... | 10,693,107 | .......... | 15,403,143 | .......... | 14,704,277 |
| Eggs.......... dozens | 1,367,224 | 205,832 | 6,014,955 | 1,089,164 | 3,046,631 | 438,760 |
| Egg yolks.......... pounds | 228,305 | 36,892 | 3,420,412 | 504,619 | .......... | .......... |
| Feathers and downs, crude: | | | | | | |
| Ostrich | .......... | 6,252,298 | .......... | 3,944,928 | .......... | 2,183,171 |
| Other | .......... | 1,985,084 | .......... | 926,735 | .......... | 319,452 |
| Fibers, animal: | | | | | | |
| Silk— | | | | | | |
| Cocoons.......... pounds | 158,342 | 55,589 | 1,413 | 1,118 | 51,495 | 35,114 |
| Raw, or as reeled from the cocoon.......... pounds | 26,049,472 | 82,147,523 | 28,594,672 | 97,828,243 | 26,030,925 | 80,531,785 |
| Waste.......... do | 5,893,741 | 2,711,605 | 5,949,744 | 3,100,664 | 4,970,254 | 2,563,658 |
| Total silk.......... do | 32,101,555 | 84,914,717 | 34,545,829 | 100,930,025 | 31,052,674 | 83,130,557 |
| Wool, and hair of the camel, goat, alpaca, and like animals— | | | | | | |
| Class 1, clothing.. pounds | 67,238,715 | 15,422,920 | 125,088,761 | 30,681,759 | 222,017,420 | 52,008,509 |
| Class 2, combing.... do | 16,886,446 | 4,266,327 | 18,839,698 | 4,906,967 | 15,054,694 | 3,735,158 |
| Class 3, carpet...... do | 111,168,094 | 15,890,576 | 102,003,313 | 17,029,611 | 65,709,752 | 10,865,475 |
| Hair of the Angora goat, alpaca, etc..... pounds | (²) | (²) | 1,717,097 | 572,430 | 5,301,563 | 1,633,426 |
| Total wool...... do | 195,293,255 | 35,579,823 | 247,648,869 | 53,190,767 | 308,083,429 | 68,242,568 |
| Total animal fibers, pounds | 227,394,810 | 120,494,540 | 282,194,698 | 154,120,792 | 339,136,103 | 151,373,125 |

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[1] Forest products come within the scope of the Department of Agriculture and are therefore included in alphabetical order in these tables.

[2] Not stated.

TABLE 182.—*Agricultural imports of the United States during the 3 years ending June 30, 1915*—Continued.

| Article imported. | Year ending June 30— | | | | | |
|---|---|---|---|---|---|---|
| | 1913 | | 1914 | | 1915 (preliminary). | |
| | Quantity. | Value. | Quantity. | Value. | Quantity. | Value. |
| ANIMAL MATTER—continued. | | | | | | |
| Gelatin..............pounds.. | 1,170,082 | $314,601 | 2,441,317 | $738,731 | 2,714,229 | $816,521 |
| Glue..................do.... | 6,550,197 | 727,850 | 22,714,877 | 1,805,543 | 8,705,147 | 824,136 |
| Honey...............gallons.. | 116,271 | 68,717 | 75,079 | 38,665 | ........... | ........... |
| Packing-house products: | | | | | | |
| Bladders, other than fish.... | ........... | 96,237 | ........... | 52,336 | ........... | ........... |
| Blood, dried............... | ........... | 80,145 | ........... | 391,816 | ........... | ........... |
| Bones, cleaned............. | ........... | 40,612 | ........... | 5,023 | ........... | ........... |
| Bones, hoofs, and horns..... | ........... | 885,893 | ........... | 1,061,466 | ........... | 911,473 |
| Bristles— | | | | | | |
| Crude, unsorted..pounds.. | 19,151 | 12,583 | 28,359 | 25,495 | 45,406 | 3,336 |
| Sorted, bunched, or prepared........pounds.. | 3,559,433 | 3,491,980 | 3,408,796 | 3,170,974 | 4,016,594 | 3,609,748 |
| Total bristles..pounds.. | 3,578,584 | 3,504,563 | 3,437,155 | 3,196,469 | 4,062,000 | 3,613,084 |
| Grease..................... | ........... | 865,443 | ........... | 1,028,505 | ........... | 711,380 |
| Gut........................ | ........... | 139,120 | ........... | 122,733 | ........... | ........... |
| Hair— | | | | | | |
| Horse............pounds.. | 5,147,923 | 2,223,344 | 3,738,836 | 1,663,448 | 3,541,903 | 1,500,666 |
| Other animal........do.... | 11,348,597 | 1,099,730 | 10,507,680 | 1.051,698 | 8,148,570 | 744,187 |
| Hide cuttings and other glue stock..................... | ........... | 1,767,382 | ........... | 2,158,514 | ........... | 1,510,608 |
| Hides and skins, other than furs— | | | | | | |
| Buffalo hides, dry ...............pounds.. | 16,234,751 | 2,790,009 | 14,492,943 | 3,073,717 | 12,422,803 | 2,825,243 |
| Calfskins— | | | | | | |
| Dry..............do.... | 39,974,383 | 15,092,017 | 27,767,882 | 11,582,807 | 15,678,046 | 4,166,617 |
| Green or pickled..do.... | 54,584,752 | 11,202,956 | 54,635,708 | 11,799,146 | 30,288,655 | 6,552,157 |
| Cattle hides— | | | | | | |
| Dry..............do.... | 82,595,225 | 18,670,672 | 71,485,650 | 18,083,314 | 93,001,127 | 21,424,552 |
| Green or pickled..do.... | 185,447,165 | 27,628,292 | 208,477,838 | 34,098,628 | 241,340,290 | 39,753,213 |
| Goatskins— | | | | | | |
| Dry..............do.... | 70,562,896 | 21,099,415 | 63,374,054 | 19,037,307 | 50,713,062 | 13,925,565 |
| Green or pickled..do.... | 25,687,409 | 3,691,002 | 21,385,374 | 3,153,956 | 15,834,101 | 2,263,984 |
| Horse and ass skins— | | | | | | |
| Dry..............do.... | 10,978,605 | 2,234,581 | 7,619,625 | 1,619,178 | 5,425,173 | 1,253,001 |
| Green or pickled..do.... | 8,447,909 | 941,371 | 4,645,213 | 514,833 | 3,800,451 | 399,682 |
| Kangaroo...........do.... | 1,097,038 | 719,188 | 1,328,668 | 898,087 | 769,125 | 427,127 |
| Sheepskins—[1] | | | | | | |
| Dry..............do.... | 31,132,037 | 6,429,936 | 29,338,146 | 6,165,947 | 20,986,018 | 3,963,438 |
| Green or pickled..do.... | 40,652,682 | 5,965,008 | 40,738,679 | 6,427,270 | 37,833,520 | 6,021,432 |
| Other...............do.... | 4,801,838 | 921,727 | 15,780,906 | 3,835,591 | 10,225,362 | 1,701,095 |
| Total hides and skins, pounds............... | 572,196,690 | 117,386,174 | 561,070,686 | 120,289,781 | 538,317,733 | 104,177,106 |
| Meat— | | | | | | |
| Cured— | | | | | | |
| Bacon and hams, pounds............... | ([2]) | ([2]) | 2,008,960 | 383,669 | 7,542,446 | 1,161,090 |
| Meat prepared or preserved............... | ........... | ([2]) | ........... | 1,676,360 | ........... | 1,193,268 |
| Sausage, bologna, pounds............... | 728,469 | 157,871 | 730,326 | 186,824 | 209,484 | 53,660 |
| Fresh— | | | | | | |
| Beef and veal..pounds.. | ([2]) | ([2]) | 180,137,183 | 15,423,911 | 184,490,759 | 16,942,661 |
| Mutton and lamb.do.... | ([2]) | ([2]) | 12,710,905 | 1,114,730 | 15,528,855 | 1,474,422 |
| Pork..............do.... | ([2]) | ([2]) | 4,624,799 | 540,801 | 16,250,514 | 2,011,065 |
| Other, including meat extracts............... | ........... | 1,268,957 | ........... | 1,075,849 | ........... | 2,561,906 |
| Total meat............ | ........... | 1,426,828 | ........... | 20,402,144 | ........... | 25,398,072 |
| Oleo stearin........pounds.. | 9,511,134 | 967,000 | 5,243,553 | 459,989 | 2,424,009 | 209,545 |
| Rennets.................... | ........... | 129,557 | ........... | 129,720 | ........... | ........... |
| Sausage casings....pounds.. | 4,569,944 | 2,476,082 | ([2]) | 2,955,657 | ([2]) | 2,944,501 |
| Total packing-house products............. | ........... | 133,088,110 | ........... | 154,969,389 | ........... | ........... |
| Total animal matter..... | ........... | 283,706,689 | ........... | 358,780,184 | ........... | ........... |

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[1] Except sheepskins with the wool on.

[2] Not stated.

TABLE 182.—*Agricultural imports of the United States during the 3 years ending June 30, 1915*—Continued.

| Article imported. | Year ending June 30— | | | | | |
|---|---|---|---|---|---|---|
| | 1913 | | 1914 | | 1915 (preliminary). | |
| | Quantity. | Value. | Quantity. | Value. | Quantity. | Value. |
| VEGETABLE MATTER. | | | | | | |
| Argols, or wine lees..pounds.. | 29,479,119 | $2,621,632 | 29,793,011 | $3,228,674 | 28,624,554 | $3,094,380 |
| Breadstuffs. (*See* Grain and grain products.) | | | | | | |
| Broom corn........long tons.. | 187 | 14,720 | 1,272 | 141,730 | 129 | 15,912 |
| Cocoa and chocolate: | | | | | | |
| Cocoa— | | | | | | |
| Crude, and leaves and shells of........pounds.. | 140,039,172 | 17,389,042 | 176,267,646 | 20,797,790 | 192,306,634 | 22,893,241 |
| Chocolate.............do.... | 3,470,680 | 787,678 | 3,096,445 | 706,193 | 2,427,561 | 584,915 |
| Total cocoa and chocolate..........pounds.. | 143,509,852 | 18,176,720 | 179,364,091 | 21,503,983 | 194,734,195 | 23,478,156 |
| Coffee..................do.... | 863,130,757 | 118,963,209 | 1,001,528,317 | 110,725,392 | 1,118,690,524 | 106,765,644 |
| Coffee substitutes: | | | | | | |
| Chicory root— | | | | | | |
| Raw, unground..pounds.. | 2,205,813 | 33,091 | (1) | (1) | ............ | ............ |
| Roasted, ground, or otherwise prepared, pounds............... | 519,179 | 21,182 | 2,292,430 | 47,882 | ............ | ............ |
| Total chicory root, pounds............... | 2,724,992 | 54,273 | 2,292,430 | 47,882 | ............ | ............ |
| Other............pounds.. | 146,897 | 22,831 | 188,446 | 21,498 | ............ | ............ |
| Total coffee substitutes, pounds............... | 2,871,889 | 77,104 | 2,480,876 | 69,380 | ............ | ............ |
| Curry and curry powder...... | ............ | 11,199 | ............ | 11,861 | ............ | ............ |
| Fibers, vegetable: | | | | | | |
| Cotton ............pounds.. | 121,852,016 | 22,987,318 | 123,346,899 | 19,456,588 | 185,204,579 | 23,208,960 |
| Flax.............long tons.. | 12,421 | 3,950,020 | 9,885 | 2,870,274 | 4,694 | 1,875,701 |
| Hemp................do.... | 7,663 | 1,484,116 | 8,822 | 1,564,483 | 5,310 | 1,156,129 |
| Istle, or Tampico fiber.do.... | 9,573 | 923,104 | 10,660 | 1,036,431 | 12,300 | 1,216,466 |
| Jute and jute butts...do.... | 125,389 | 9,280,565 | 106,033 | 11,174,028 | 83,140 | 4,677,334 |
| Kapoc................do.... | 2,842 | 809,001 | 1,827 | 441,109 | 3,860 | 767,509 |
| Manila................do.... | 73,823 | 12,629,693 | 49,688 | 9,779,539 | 51,081 | 9,200,793 |
| New Zealand flax.....do.... | 7,827 | 917,166 | 6,171 | 716,953 | 2,944 | 319,936 |
| Sisal grass............do.... | 153,869 | 17,803,819 | 215,547 | 25,860,729 | 185,764 | 20,572,347 |
| Other.................do.... | 13,691 | 1,281,175 | 9,799 | 906,449 | 7,986 | 633,802 |
| Total vegetable fibers... | ............ | 72,065,977 | ............ | 73,806,583 | ............ | 63,628,977 |
| Flowers, natural............... | ............ | 13,376 | ............ | 24,540 | ............ | ............ |
| Forest products: | | | | | | |
| Charcoal..................... | ............ | 25,028 | ............ | 60,634 | ............ | ............ |
| Cinchona bark.....pounds.. | 3,553,239 | 357,490 | 3,648,868 | 464,412 | 3,944,549 | 561,106 |
| Cork wood or cork bark..... | ............ | 3,152,070 | ............ | 3,851,794 | ............ | 2,762,895 |
| Dyewoods, and extracts of— | | | | | | |
| Dyewoods— | | | | | | |
| Logwood.....long tons.. | 37,027 | 476,916 | 30,062 | 378,064 | 55,059 | 742,234 |
| Other.............do.... | 3,973 | 55,843 | 7,663 | 108,928 | 13,361 | 197,122 |
| Total dyewoods.do.... | 41,000 | 532,759 | 37,725 | 486,992 | 68,420 | 939,356 |
| Extracts and decoctions of............pounds.. | 9,481,275 | 365,149 | 8,810,040 | 306,934 | 6,191,232 | 202,675 |
| Total dyewoods, and extracts of............ | ............ | 897,908 | ............ | 793,926 | ............ | 1,142,031 |
| Guayule plant.....pounds.. | 294,335 | 14,725 | ............ | ............ | ............ | ............ |
| Gums— | | | | | | |
| Camphor— | | | | | | |
| Crude.............do.... | 3,709,264 | 1,007,301 | 3,476,908 | 929,715 | 3,729,207 | 1,003,261 |
| Refined...........do.... | 491,256 | 162,557 | 566,106 | 262,790 | 1,170,666 | 417,861 |
| Chicle..............do.... | 13,758,592 | 5,282,722 | 8,040,891 | 3,012,458 | 6,499,664 | 2,459,810 |

[1] Not stated.

TABLE 182.—*Agricultural imports of the United States during the 3 years ending June 30, 1915*—Continued.

| Article imported. | Year ending June 30— | | | | | |
|---|---|---|---|---|---|---|
| | 1913 | | 1914 | | 1915 (preliminary). | |
| | Quantity. | Value. | Quantity. | Value. | Quantity. | Value. |
| VEGETABLE MATTER—contd. | | | | | | |
| Forest products—Continued. | | | | | | |
| Gums—Continued. | | | | | | |
| Copal, kauri, and damar, pounds | 28,573,201 | $2,519,519 | 32,693,412 | $3,354,679 | 27,450,545 | $2,821,346 |
| Gambier, or terra japonica, pounds | 17,064,998 | 790,081 | 14,936,129 | 571,067 | 14,169,490 | 542,200 |
| India rubber, gutta percha, etc.— | | | | | | |
| Balata...pounds | 1,318,598 | 766,772 | 1,533,024 | 793,126 | 2,472,224 | 963,384 |
| Guayule gum...do | 10,218,191 | 4,345,088 | 1,475,804 | 607,076 | 5,111,849 | 1,441,367 |
| Gutta-joolatong, or East Indian gum...pounds | 45,345,338 | 2,174,441 | 24,926,571 | 1,155,402 | 14,851,264 | 731,995 |
| Gutta-percha...do | 480,853 | 167,313 | 1,846,109 | 323,567 | 1,618,214 | 230,750 |
| India rubber...do | 113,384,359 | 90,170,316 | 131,995,742 | 71,219,851 | 172,068,428 | 83,030,269 |
| Total India rubber, etc...pounds | 170,747,339 | 97,623,930 | 161,777,250 | 74,099,022 | 196,121,979 | 86,397,765 |
| Shellac...pounds | 21,912,015 | 3,046,919 | 16,719,756 | 2,689,269 | 24,153,363 | 3,016,472 |
| Other | ............ | 2,359,796 | ............ | 2,001,631 | ............ | 1,581,704 |
| Total gums | ............ | 112,792,825 | ............ | 86,840,631 | ............ | 98,240,419 |
| Ivory, vegetable...pounds | 29,056,278 | 977,525 | 27,135,406 | 881,354 | 21,059,746 | 510,677 |
| Naval stores: | | | | | | |
| Tar and pitch (of wood), barrels | 287 | 5,611 | 561 | 7,946 | ............ | ............ |
| Turpentine, spirits of, gallons | 56,855 | 19,667 | 68,966 | 28,818 | ............ | ............ |
| Total naval stores | ............ | 25,278 | ............ | 36,764 | ............ | ............ |
| Palm leaf, natural | ............ | 17,214 | ............ | 11,044 | ............ | ............ |
| Tanning materials: | | | | | | |
| Mangrove bark...long tons | 15,187 | 336,136 | 7,689 | 196,891 | 8,096 | 218,952 |
| Quebracho, extract of, pounds | 78,833,466 | 2,005,770 | 93,329,087 | 2,543,302 | 120,450,283 | 3,676,749 |
| Quebracho wood...l. tons | 102,769 | 1,300,126 | 73,956 | 900,880 | 54,955 | 753,981 |
| Sumac, ground...pounds | 14,489,776 | 297,506 | 10,770,400 | 258,738 | 13,165,182 | 323,448 |
| Other | ............ | 390,056 | ............ | 468,230 | ............ | 370,133 |
| Total tanning materials | ............ | 4,329,594 | ............ | 4,368,041 | ............ | 5,343,263 |
| Wood, not elsewhere specified— | | | | | | |
| Brier-root or brierwood and ivy or laurel root | ............ | 313,189 | ............ | 241,493 | ............ | 334,552 |
| Chair cane or reed | ............ | 620,893 | ............ | 451,099 | ............ | 109,181 |
| Cabinet woods, unsawed— | | | | | | |
| Cedar...M feet | 19,092 | 1,094,048 | 17,285 | 982,152 | 15,875 | 947,313 |
| Mahogany...do | 66,318 | 4,839,625 | 70,470 | 4,925,126 | 42,325 | 2,640,705 |
| Other | ............ | 1,441,541 | ............ | 1,217,410 | ............ | 683,757 |
| Total cabinet woods | ............ | 7,375,214 | ............ | 7,124,688 | ............ | 4,271,775 |
| Logs and round timber, M feet | 140,876 | 1,506,235 | 148,938 | 1,657,605 | 131,544 | 1,263,641 |
| Lumber— | | | | | | |
| Boards, deals, planks, and other sawed lumber...M feet | 1,091,649 | 18,969,776 | 931,408 | 17,817,550 | 939,322 | 17,810,861 |
| Laths...M | 712,119 | 1,905,254 | 564,778 | 1,613,586 | 672,023 | 1,916,214 |
| Shingles...M | 560,297 | 1,399,751 | 895,038 | 2,190,170 | 1,487,116 | 3,104,698 |
| Other | ............ | 885,888 | ............ | 815,279 | ............ | 621,097 |
| Total lumber | ............ | 23,160,669 | ............ | 22,436,585 | ............ | 23,452,870 |

TABLE 182.—*Agricultural imports of the United States during the 3 years ending June 30, 1915*—Continued.

| Article imported. | Year ending June 30— | | | | | |
|---|---|---|---|---|---|---|
| | 1913 | | 1914 | | 1915 (preliminary). | |
| | Quantity. | Value. | Quantity. | Value. | Quantity. | Value. |
| VEGETABLE MATTER—contd. | | | | | | |
| Forest products—Continued. | | | | | | |
| Wood, not elsewhere specified—Continued. | | | | | | |
| Pulp wood— | | | | | | |
| Peeled ... cords | 618,124 | $3,843,950 | 630,863 | $4,062,835 | 551,239 | $3,516,460 |
| Rossed ... do | 258,455 | 2,183,785 | 255,844 | 2,118,910 | 187,047 | 1,597,750 |
| Rough ... do | 160,315 | 927,217 | 186,316 | 1,063,721 | 247,400 | 1,458,629 |
| Rattan and reeds | ... | 1,040,121 | ... | 1,210,390 | ... | 771,628 |
| All other | ... | 776,198 | ... | 559,036 | ... | 511,682 |
| Total wood, n. e. s. | ... | 41,747,471 | ... | 40,926,362 | ... | 37,348,168 |
| Wood pulp— | | | | | | |
| Chemical— | | | | | | |
| Bleached ... pounds | 163,782,137 | 3,726,685 | 177,833,052 | 4,153,036 | 225,243,200 | 5,256,724 |
| Unbleached ... do | 598,574,507 | 9,435,942 | 605,926,470 | 10,136,707 | 672,255,360 | 11,483,268 |
| Mechanical ... do | 364,168,563 | 3,002,689 | 354,967,673 | 2,733,595 | 419,446,720 | 3,141,119 |
| Total wood pulp ... do | 1,126,525,207 | 16,165,316 | 1,138,727,195 | 17,023,338 | 1,316,945,280 | 19,881,111 |
| Total forest products | ... | 180,502,444 | ... | 155,261,300 | ... | ... |
| Fruits: | | | | | | |
| Fresh or dried— | | | | | | |
| Bananas ... bunches | 42,357,109 | 14,484,258 | 48,683,592 | 16,397,884 | 41,091,585 | 13,512,960 |
| Currants ... pounds | 30,843,735 | 1,306,410 | 32,033,177 | 1,233,228 | 30,350,527 | 1,209,273 |
| Dates ... do | 34,304,951 | 660,311 | 34,073,608 | 679,527 | 24,949,374 | 420,208 |
| Figs ... do | 16,837,819 | 944,317 | 19,284,868 | 941,207 | 20,779,730 | 1,024,495 |
| Grapes ... cubic feet | 1,135,942 | 1,359,415 | 1,334,163 | 1,599,969 | 1,323,928 | 1,523,547 |
| Lemons ... pounds | 151,416,412 | 4,300,266 | (1) | 5,981,635 | (1) | 3,730,075 |
| Olives ... gallons | 3,946,076 | 1,896,982 | 5,316,364 | 2,292,837 | 3,622,275 | 1,607,903 |
| Oranges ... pounds | 12,252,960 | 233,760 | (1) | 93,472 | (1) | 50,022 |
| Pineapples | ... | 1,319,006 | ... | 1,287,862 | ... | 1,309,750 |
| Raisins ... pounds | 2,579,705 | 241,630 | 4,554,549 | 309,511 | 2,808,806 | 238,958 |
| Other | ... | 1,115,330 | ... | 1,710,009 | ... | 1,431,242 |
| Total fresh or dried | ... | 27,861,685 | ... | 32,527,141 | ... | 26,058,428 |
| Prepared or preserved | ... | 795,399 | ... | 1,111,193 | ... | 1,022,968 |
| Total fruits | ... | 28,657,084 | ... | 33,638,334 | ... | 27,081,396 |
| Ginger, preserved or pickled, pounds | 551,320 | 42,061 | 478,058 | 36,434 | ... | ... |
| Grain and grain products: | | | | | | |
| Grain— | | | | | | |
| Corn ... bushels | 903,062 | 491,079 | 12,367,369 | 7,917,243 | 9,897,939 | 6,083,385 |
| Oats ... do | 723,899 | 289,364 | 22,273,624 | 7,885,837 | 630,722 | 290.180 |
| Wheat ... do | 798,028 | 559,559 | 1,978,937 | 1,761,995 | 426,469 | 469,847 |
| Total grain ... do | 2,424,989 | 1,340,002 | 36,619,930 | 17,565,075 | 10,955,130 | 6,843,412 |
| Grain products— | | | | | | |
| Bread and biscuit | ... | 255,416 | ... | 415,318 | ... | 266,079 |
| Macaroni, vermicelli, etc., pounds | 106,500,752 | 4,913,624 | 126,128,621 | 5,698,783 | 56,542,480 | 3,061,337 |
| Malt ... bushels | 10,419 | 15,121 | 13,472 | 16,367 | ... | ... |
| Meal and flour— | | | | | | |
| Wheat flour ... barrels | 107,558 | 453,681 | 89,911 | 363,855 | 64,200 | 309,742 |
| Other | ... | 1,754,842 | ... | 3,382,879 | ... | 2,037,786 |
| Total grain products | ... | 7,392,684 | ... | 9,877,202 | ... | 5,674,944 |
| Total grain and grain products | ... | 8,732,686 | ... | 27,442,277 | ... | 12,518,356 |
| Hay ... long tons | 156,323 | 1,514,311 | 170,786 | 1,634,390 | 20,187 | 228,906 |
| Hops ... pounds | 8,494,144 | 2,852,865 | 5,382,025 | 2,790,516 | 11,651,332 | 2,778,735 |
| Indigo ... do | 7,712,508 | 1,102,897 | 8,125,211 | 1,093,226 | 7,975,709 | 1,596,978 |
| Licorice root ... do | 105,116,227 | 1,806,066 | 115,636,131 | 2,047,192 | 65,958,501 | 1,252,989 |

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[1] Not stated.

TABLE 182.—*Agricultural imports of the United States during the 3 years ending June 30, 1915*—Continued.

| Article imported. | Year ending June 30— | | | | | |
|---|---|---|---|---|---|---|
| | 1913 | | 1914 | | 1915 (preliminary). | |
| | Quantity. | Value. | Quantity. | Value. | Quantity. | Value. |
| VEGETABLE MATTER—contd. | | | | | | |
| Liquors, alcoholic: | | | | | | |
| Distilled spirits— | | | | | | |
| Brandy.......proof galls.. | 610,358 | $1,647,277 | 602,563 | $1,617,483 | 400,203 | $1,035,562 |
| Cordials, liqueurs, etc., proof galls.............. | 575,290 | 1,233,700 | 515,575 | 1,063,267 | 408,100 | 858,599 |
| Gin...........proof galls.. | 974,776 | 999,921 | 1,055,885 | 1,017,569 | 742,439 | 717,131 |
| Whisky.............do.... | 1,541,663 | 3,153,640 | 1,571,870 | 3,186,627 | 1,327,759 | 2,641,617 |
| Other...............do.... | 378,623 | 339,619 | 414,950 | 378,902 | 411,236 | 317,413 |
| Total distilled spirits, proof galls............ | 4,080,710 | 7,374,157 | 4,160,843 | 7,263,848 | 3,289,737 | 5,570,322 |
| Malt liquors— | | | | | | |
| Bottled..........gallons.. | 1,452,728 | 1,372,823 | 1,213,320 | 1,152,598 | 799,946 | 768,893 |
| Unbottled..........do.... | 6,245,922 | 1,917,442 | 5,963,913 | 1,814,431 | 2,551,158 | 818,505 |
| Total malt liquors.do.... | 7,698,650 | 3,290,265 | 7,177,233 | 2,967,029 | 3,351,104 | 1,587,398 |
| Wines— | | | | | | |
| Champagne and other sparkling...doz. quarts.. | 280,828 | 4,636,191 | 270,002 | 4,418,958 | 114,630 | 2,004,680 |
| Still wines— | | | | | | |
| Bottled..dozen quarts.. | 678,131 | 2,724,471 | 728,303 | 2,940,277 | 627,067 | 2,273,916 |
| Unbottled......gallons.. | 4,427,130 | 2,718,045 | 5,220,380 | 2,757,434 | 3,860,273 | 1,968,587 |
| Total still wines....... | ............ | 5,442,516 | ............ | 5,697,711 | ............ | 4,242,503 |
| Total wines........... | ............ | 10,078,707 | ............ | 10,116,669 | ............ | 6,247,183 |
| Total alcoholic liquors. | ............ | 20,743,120 | ............ | 20,347,546 | ............ | 13,404,903 |
| Malt, barley. (*See* Grain and grain products.) | | | | | | |
| Malt extract, fluid and solid... | ............ | 12,040 | ............ | 16,566 | ............ | ............ |
| Malt liquors. (*See* Liquors, alcoholic.) | | | | | | |
| Nursery stock: | | | | | | |
| Plants, trees, shrubs, and vines— | | | | | | |
| Fruit plants, tropical and semitropical, for propagation, etc.............. | ............ | 5,847 | ............ | (¹) | ............ | (¹) |
| Bulbs, bulbous roots or corms, cultivated for their flowers or foliage M...................... | 288,646 | 1,823,307 | 216,138 | 2,092,139 | 255,700 | 2,375,316 |
| Other...................... | ............ | 1,379,913 | ............ | 1,514,669 | ............ | 1,373,350 |
| Total nursery stock..... | ............ | 3,209,067 | ............ | 3,606,808 | ............ | 3,748,666 |
| Nuts: | | | | | | |
| Almonds— | | | | | | |
| Shelled..........pounds.. | 13,078,771 | 3,137,104 | 13,307,631 | 4,040,785 | 12,208,551 | 3,100,428 |
| Unshelled..........do.... | 2,592,187 | 207,554 | 5,730,774 | 638,504 | 4,902,713 | 499,151 |
| Coconuts, unshelled......... | ............ | 1,781,377 | ............ | 2,133,416 | ............ | 1,593,517 |
| Coconut meat, broken, or copra— | | | | | | |
| Not shredded, desiccated, or prepared....pounds.. | 34,267,811 | 1,531,820 | 45,437,155 | 2,395,013 | 90,546,827 | 3,397,477 |
| Shredded, desiccated, or prepared.......pounds.. | 6,602,556 | 493,768 | 10,297,554 | 807,198 | 5,936,212 | 432,993 |
| Cream and Brazil..bushels.. | 11,933,445 | 668,534 | 20,423,497 | 1,075,907 | 16,272,581 | 878,272 |
| Filberts— | | | | | | |
| Shelled..........pounds.. | 1,946,488 | 281,460 | 1,643,507 | 261,785 | 1,973,192 | 275,026 |
| Unshelled..........do.... | 8,480,818 | 614,023 | 10,992,972 | 834,078 | 11,717,370 | 949,099 |
| Peanuts— | | | | | | |
| Shelled.............do.... | 6,801,415 | 312,397 | 27,077,158 | 1,239,227 | 9,643,691 | 333,980 |
| Unshelled..........do.... | 12,281,580 | 470,390 | 17,472,631 | 660,010 | 14,540,982 | 490,779 |
| Walnuts— | | | | | | |
| Shelled.............do.... | 10,371,128 | 2,206,261 | 8,928,029 | 2,042,680 | 11,107,490 | 2,322,754 |
| Unshelled..........do.... | 16,291,313 | 1,293,720 | 28,267,699 | 2,296,801 | 22,338,348 | 1,661,473 |
| Other...................... | ............ | 981,497 | ............ | 1,463,197 | ............ | 884,850 |
| Total nuts............. | ............ | 13,979,905 | ............ | 19,888,601 | ............ | 16,819,799 |
| Oil cake............pounds.. | 11,047,399 | 141,137 | 11,656,803 | 120,078 | ............ | ............ |

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[1] Not stated.

TABLE 182.—*Agricultural imports of the United States during the 3 years ending June 30, 1915*—Continued.

| Article imported. | Year ending June 30— | | | | | |
|---|---|---|---|---|---|---|
| | 1913 | | 1914 | | 1915 (preliminary). | |
| | Quantity. | Value. | Quantity. | Value. | Quantity. | Value. |
| VEGETABLE MATTER—contd. | | | | | | |
| **Oils**, vegetable: | | | | | | |
| Fixed or expressed— | | | | | | |
| Cocoa butter or butterine, pounds | 3,603,332 | $992,358 | 2,838,761 | $793,451 | 150,378 | $42,185 |
| Coconut oil......pounds.. | 50,504,192 | 4,183,036 | 74,386,213 | 6,703,942 | 63,135,428 | 5,430,581 |
| Cottonseed..........do.... | 3,383,511 | 185,383 | 17,293,201 | 1,044,834 | 15,312,361 | 728,961 |
| Flaxseed or linseed, gallons | 173,690 | 111,228 | 192,282 | 91,555 | 535,291 | 248,403 |
| Nut oil, or oil of nuts, n. e. s.— | | | | | | |
| Chinese nut....gallons.. | 5,996,666 | 2,733,884 | 4,932,444 | 1,962,389 | 4,940,330 | 1,733,264 |
| Peanut............do.... | 1,195,683 | 820,763 | 1,337,136 | 918,614 | 852,905 | 581,150 |
| Olive for mechanical purposes..........gallons.. | 619,356 | 407,074 | 763,924 | 477,210 | 653,064 | 450,001 |
| Olive, salad.........do.... | 5,221,001 | 6,739,172 | 6,217,560 | 7,916,980 | 6,710,967 | 8,225,485 |
| Palm oil.........pounds.. | 50,228,706 | 3,351,868 | 58,040,202 | 3,858,001 | 31,500,661 | 2,025,060 |
| Palm kernel........do.... | 23,569,031 | 1,868,658 | 34,327,600 | 3,087,343 | 4,905,852 | 446,763 |
| Rapeseed........gallons.. | 1,549,728 | 779,400 | 1,464,265 | 704,655 | 1,498,642 | 786,485 |
| Soy bean........pounds.. | 12,340,185 | 635,888 | 16,360,452 | 830,790 | 19,206,521 | 899,819 |
| Other | ............ | 381,801 | ............ | 439,009 | ............ | 202,950 |
| Total fixed or expressed. | ............ | 23,190,513 | ............ | 28,828,773 | ............ | 21,801,107 |
| Volatile or essential— | | | | | | |
| Lemon...........pounds.. | 381,093 | 744,658 | 385,959 | 858,220 | 577,595 | 600,642 |
| Other | ............ | 4,194,827 | ............ | 2,633,789 | ............ | 2,370,364 |
| Total volatile or essential | ............ | 4,939,485 | ............ | 3,492,009 | ............ | 2,971,006 |
| Total vegetable oils | ............ | 28,129,998 | ............ | 32,320,782 | ............ | 24,772,113 |
| **Opium**, crude........pounds.. | 508,433 | 2,565,965 | 455,200 | 1,810,429 | 484,027 | 2,445,005 |
| **Rice**, rice meal, etc.: | | | | | | |
| Rice— | | | | | | |
| Cleaned..........pounds.. | 32,715,479 | 1,203,005 | 95,503,998 | 3,017,108 | 112,118,326 | 2,655,739 |
| Uncleaned, including paddy............pounds.. | 51,779,326 | 1,900,081 | 54,784,051 | 1,917,658 | 90,241,834 | 2,340,968 |
| Rice flour, rice meal, and broken rice..pounds.. | 137,608,742 | 2,813,778 | 139,906,868 | 2,538,941 | 74,831,312 | 1,307,509 |
| Total rice, etc.....do.... | 222,103,547 | 5,916,864 | 290,194,917 | 7,473,707 | 277,191,472 | 6,304,216 |
| **Sago**, tapioca, etc | ............ | 2,187,217 | ............ | 1,641,540 | ............ | 1,434,219 |
| **Seeds**: | | | | | | |
| Castor beans or seeds bushels | 887,747 | 985,598 | 1,030,543 | 1,139,311 | 924,604 | 993,577 |
| Clover— | | | | | | |
| Red..............pounds.. | 6,072,842 | 987,702 | 6,764,218 | 835,691 | 8,749,757 | 1,072,468 |
| Other..............do.... | 15,151,715 | 1,508,011 | 23,343,431 | 2,047,941 | 15,406,954 | 1,162,810 |
| Flaxseed or linseed.bushels.. | 5,294,296 | 8,127,774 | 8,653,235 | 10,571,410 | 10,066,215 | 13,374,536 |
| Grass seed, n. e. s...pounds.. | 25,452,076 | 1,637 244 | 31 937,701 | 1,634,627 | 34,690,259 | 1,384,372 |
| Sugar beet............do.... | 14,768,207 | 1,064,392 | 10,293,898 | 799,525 | 15,882,661 | 1,409,973 |
| Other | ............ | 3,114,812 | ............ | 3,055,679 | ............ | 3,657,084 |
| Total seeds | ............ | 17,425,533 | ............ | 20,084,184 | ............ | 23,054,820 |
| **Spices**: | | | | | | |
| Unground— | | | | | | |
| Cassia, or cassia vera, pounds | 6,853,915 | 535,974 | 6,771,901 | 404,853 | 5,786,324 | 357,071 |
| Ginger root, not preserved, pounds | 7,756,090 | 399,270 | 3,771,086 | 171,250 | 3,127,722 | 150,515 |
| Pepper, black or white, pounds | 27,562,361 | 2,852,665 | 24,173,621 | 2,427,927 | 30,268,384 | 3,086,782 |
| Other...........pounds.. | 16,062,861 | 1,576,462 | 2,896,823 | 309,184 | ............ | ............ |
| Total unground, pounds | 58,235,227 | 5,364,371 | 37,613,481 | 3,313,214 | 39,182,430 | 3,594,368 |
| Ground...........pounds.. | 6,990,174 | 822,765 | 18,961,068 | 2,282,295 | 20,902,214 | 2,332,604 |
| Total spices.......do.... | 65,225,401 | 6,187,136 | 56,574,499 | 5,595,509 | 60,084,644 | 5,926,972 |

TABLE 182.—*Agricultural imports of the United States during the 3 years ending June 30, 1915*—Continued.

| Article imported. | Year ending June 30— | | | | | |
|---|---|---|---|---|---|---|
| | 1913 | | 1914 | | 1915 (preliminary). | |
| | Quantity. | Value. | Quantity. | Value. | Quantity. | Value. |
| VEGETABLE MATTER—contd. | | | | | | |
| **Spirits, distilled.** (*See* Liquors, alcoholic.) | | | | | | |
| **Starch**...............pounds.. | 16,710,498 | $457,784 | 15,518,434 | $408,922 | 13,233,283 | $343,800 |
| **Straw and grass**,...long tons.. | 3,553 | 19,079 | 6,060 | 33,499 | | |
| **Sugar and molasses:** | | | | | | |
| Molasses...........gallons.. | 33,926,521 | 1,456,350 | 51,410,271 | 1,744,719 | 70,839,623 | 1,963,505 |
| Sugar— | | | | | | |
| Raw— | | | | | | |
| Beet...........pounds.. | 182,647,582 | 4,169,523 | 2,367,708 | 70,829 | 877,623 | 29,386 |
| Cane.............do.... | 4,554,049,872 | 99,293,354 | 5,061,564,621 | 101,365,561 | 5,418,630,482 | 173,837,646 |
| Maple sugar and sirup, pounds............... | (1) | (1) | 2,095,983 | 163,047 | 1,473,762 | 125,571 |
| Total raw....pounds.. | 4,736,697,454 | 103,462,877 | 5,066,028,312 | 101,599,437 | 5,420,981,867 | 173,992,603 |
| Refined.............do.... | 3,341,034 | 176,946 | 793,561 | 49,938 | | |
| Total sugar.....do.... | 4,740,041,488 | 103,639,823 | 5,066,821,873 | 101,649,375 | 5,420,981,867 | 173,992,603 |
| Total sugar and molasses............... | | 105,096,173 | | 103,394,094 | | 175,956,108 |
| **Tea**..................pounds.. | 94,812,800 | 17,433,688 | 91,130,815 | 16,735,302 | 96,987,942 | 17,512,619 |
| **Tea, waste, etc., for manufacturing**..............pounds.. | 7,053,550 | 211,541 | 5,874,308 | 194,293 | | |
| **Teazels**....................... | | 27,155 | | 24,310 | | |
| **Tobacco:** | | | | | | |
| Leaf— | | | | | | |
| Wrapper.........pounds.. | 6,398,782 | 8,242,212 | 6,092,787 | 7,785,387 | 7,241,178 | 9,267,044 |
| Filler and other leaf.do.... | 61,133,963 | 27,691,361 | 54,047,436 | 27,247,259 | 38,523,550 | 17,889,621 |
| Stems..............do.... | 444,373 | 4,938 | 1,034,528 | 5,874 | | |
| Total tobacco.....do.... | 67,977,118 | 35,938,511 | 61,174,751 | 35,038,520 | 45,764,728 | 27,156,665 |
| **Vanilla beans.** do.... | 1,049,497 | 2,641,573 | 898,100 | 2,277,675 | 888,569 | 1,863,515 |
| **Vegetables:** | | | | | | |
| Fresh and dried— | | | | | | |
| Beans...........bushels.. | 1,048,297 | 1,938,105 | 1,634,070 | 2,955,663 | 905,647 | 1,461,917 |
| Onions.............do.... | 780,458 | 481,756 | 1,114,811 | 909,204 | 829,177 | 657,374 |
| Peas, dried.........do.... | 1,134,346 | 1,835,775 | 866,488 | 1,849,274 | 546,903 | 1,305,633 |
| Potatoes............do.... | 327,230 | 303,214 | 3,645,993 | 1,763,782 | 270,942 | 274,915 |
| Other................... | | 1,410,354 | | 1,630,113 | | 1,350,101 |
| Total fresh and dried.... | | 5,969,204 | | 9,108,036 | | 5,049,940 |
| Prepared or preserved— | | | | | | |
| Mushrooms......pounds.. | 8,123,373 | 1,172,376 | 9,188,177 | 1,306,818 | 6,195,819 | 885,653 |
| Pickles and sauces........ | | 1,123,108 | | 1,246,249 | | 839,916 |
| Other..................... | | 3,094,073 | | 3,472,432 | | 2,554,223 |
| Total prepared or preserved............... | | 5,389,557 | | 6,025,499 | | 4,279,792 |
| Total vegetables........ | | 11,358,761 | | 15,133,535 | | 9,329,732 |
| **Vinegar**.............gallons.. | 295,939 | 85,090 | 311,643 | 94,597 | | |
| **Wafers, unmedicated**.......... | | 28,491 | | 32,797 | | |
| **Wax, vegetable**......pounds.. | 5,652,995 | 1,146,077 | 4,255,686 | 1,049,126 | 5,634,809 | 1,012,402 |
| **Wines.** (*See* Liquors, alcoholic.) | | | | | | |
| **Total vegetable matter, including forest products**.................. | | 712,096,265 | | 720,778,232 | | |
| **Total vegetable matter, excluding forest products**.................. | | 531,593,821 | | 565,516,932 | | |
| **Total agricultural imports, including forest products**.............. | | 995,802,954 | | 1,079,508,416 | | |
| **Total agricultural imports, excluding forest products**.............. | | 815,300,510 | | 924,247,116 | | |

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[1] Included in "Refined."

TABLE 183.—*Agricultural exports (domestic) of the United States during the 3 years ending June 30, 1915.*

| Articles exported. | Year ending June 30— | | | | | |
|---|---|---|---|---|---|---|
| | 1913 | | 1914 | | 1915 (preliminary). | |
| | Quantity. | Value. | Quantity. | Value. | Quantity. | Value. |
| ANIMAL MATTER. | | | | | | |
| Animals, live: | | | | | | |
| Cattle............number.. | 24,714 | $1,177,199 | 18,376 | $647,288 | 5,484 | $702,847 |
| Horses............do.... | 28,707 | 3,960,102 | 22,776 | 3,388,819 | 289,340 | 64,046,584 |
| Mules............do.... | 4,744 | 733,795 | 4,883 | 690,974 | 65,788 | 12,726,143 |
| Sheep............do.... | 187,132 | 605,725 | 152,600 | 534,543 | 47,213 | 182,278 |
| Swine............do.... | 15,332 | 151,747 | 10,122 | 133,751 | 7,799 | 93,067 |
| Other (including fowls)...... | ........... | 451,554 | ........... | 408,284 | ........... | 202,817 |
| Total live animals....... | ........... | 7,080,122 | ........... | 5,803,659 | ........... | 77,953,686 |
| Beeswax............pounds.. | 116,296 | 33,131 | 96,215 | 27,292 | ........... | ........... |
| Dairy products: | | | | | | |
| Butter............do.... | 3,585,600 | 872,804 | 3,693,597 | 877,453 | 9,850,704 | 2,392,480 |
| Cheese............do.... | 2,599,058 | 441,186 | 2,427,577 | 414,124 | 54,069,917 | 8,247,174 |
| Milk— | | | | | | |
| Condensed..........do.... | 16,525,918 | 1,432,848 | 16,209,082 | 1,341,140 | 37,235,627 | 3,066,642 |
| Other, including cream ... | ........... | 474,055 | ........... | 333,217 | ........... | 343,583 |
| Total dairy products, pounds............ | ........... | 3,220,893 | ........... | 2,965,934 | ........... | 14,049,879 |
| Eggs............dozens.. | 20,409,390 | 4,391,653 | 16,148,849 | 3,734,087 | 20,784,424 | 5,003,764 |
| Egg yolks............ | ........... | 67,854 | ........... | 47,968 | ........... | ........... |
| Feathers............ | ........... | 690,612 | ........... | 640,020 | ........... | 281,806 |
| Fibers, animal: | | | | | | |
| Silk waste.........pounds.. | 37,547 | 9,704 | 27,597 | 8,178 | ........... | ........... |
| Wool............do.... | 77,047 | 22,625 | 335,348 | 124,127 | ........... | ........... |
| Total animal fibers...... | 114,594 | 32,329 | 362,945 | 132,305 | ........... | ........... |
| Glue............pounds.. | 2,544,942 | 276,619 | 2,351,773 | 258,611 | 2,874,225 | 298,136 |
| Honey............ | ........... | 182,252 | ........... | 135,669 | ........... | ........... |
| Packing-house products: | | | | | | |
| Beef— | | | | | | |
| Canned..........pounds.. | 6,840,348 | 857,826 | 3,464,733 | 461,901 | 75,274,608 | 11,974,673 |
| Cured or pickled....do.... | 25,856,919 | 2,489,965 | 23,265,974 | 2,289,516 | 31,874,743 | 3,382,670 |
| Fresh............do.... | 7,362,388 | 902,149 | 6,394,404 | 788,793 | 170,440,934 | 21,731,633 |
| Oils—Oleo oil.......do.... | 92,849,757 | 10,866,253 | 97,017,065 | 10,156,665 | 80,481,946 | 9,341,188 |
| Oleomargarine......do.... | 2,987,582 | 311,485 | 2,532,821 | 263,453 | 5,252,183 | 617,035 |
| Tallow............do.... | 30,586,300 | 1,910,439 | 15,812,831 | 1,002,011 | 20,239,988 | 1,386,445 |
| Total beef.........do.... | 166,483,294 | 17,338,117 | 148,487,828 | 14,962,339 | 383,564,402 | 48,433,644 |
| Bones, hoofs, horns, and horn tips, strips and waste. | ........... | 77,576 | ........... | 47,651 | ........... | ........... |
| Grease, grease scraps, and all soap stock— | | | | | | |
| Lubricating............ | ........... | 2,339,015 | ........... | 2,394,918 | ........... | 2,384,895 |
| Soap stock............ | ........... | 4,844,342 | ........... | 5,046,959 | ........... | 4,266,097 |
| Hair............ | ........... | 1,449,157 | ........... | 1,985,038 | ........... | 1,402,189 |
| Hides and skins, other than furs— | | | | | | |
| Calfskins.........pounds.. | 923,922 | 155,499 | 323,417 | 69,515 | 1,074,529 | 248,547 |
| Cattle hides.........do.... | 17,971,800 | 2,589,608 | 12,524,901 | 1,933,705 | 21,135,730 | 4,013,172 |
| Horse............do.... | 5,472,832 | 456,879 | 5,742,855 | 610,456 | 605,054 | 67,798 |
| Other............do.... | 1,791,775 | 247,943 | 1,275,962 | 193,577 | 2,107,867 | 356,207 |
| Total............do.... | 26,160,338 | 3,449,924 | 19,867,135 | 2,807,253 | 24,923,180 | 4,685,724 |
| Hoofs, horns, and horn tips, strips, and waste............ | ........... | 102,705 | ........... | 61,180 | ........... | 16,182 |
| Lard compounds...pounds.. | 67,456,832 | 5,915,759 | 58,303,564 | 5,489,139 | 69,980,614 | 6,045,752 |
| Meat, canned, n. e. s............ | ........... | 1,086,463 | ........... | 1,350,218 | ........... | 2,192,464 |
| Mutton............pounds.. | 5,266,019 | 591,969 | 4,685,496 | 528,023 | 3,877,413 | 448,221 |
| Oils, animal, n. e. s.gallons.. | 1,603,325 | 970,717 | 891,035 | 609,294 | 559,197 | 405,635 |
| Pork— | | | | | | |
| Canned..........pounds.. | 4,148,343 | 565,039 | 3,074,303 | 492,822 | 4,644,418 | 745,928 |

**TABLE 183.**—*Agricultural exports (domestic) of the United States during the 3 years ending June 30, 1915*—Continued.

| Article exported. | Year ending June 30— 1913 Quantity. | 1913 Value. | 1914 Quantity. | 1914 Value. | 1915 (preliminary). Quantity. | 1915 (preliminary). Value. |
|---|---|---|---|---|---|---|
| ANIMAL MATTER—continued. | | | | | | |
| Packing-house products—Con. | | | | | | |
| Pork—Continued. | | | | | | |
| Cured— | | | | | | |
| Bacon.........pounds.. | 200,993,584 | $25,647,167 | 193,964,252 | $25,879,056 | 346,718,227 | $47,326,129 |
| Hams and shoulders, pounds............. | 159,544,387 | 21,641,386 | 165,881,791 | 23,767,447 | 203,701,114 | 29,049,931 |
| Salted or pickled, pounds............. | 53,749,023 | 5,699,136 | 45,543,085 | 4,896,574 | 45,655,574 | 4,911,307 |
| Total cured pounds.. | 414,287,294 | 52,987,689 | 405,389,128 | 54,543,077 | 596,074,915 | 81,287,367 |
| Fresh..............do.... | 2,457,997 | 310,574 | 2,668,020 | 359,181 | 3,908,193 | 473,801 |
| Lard...............do.... | 519,025,384 | 58,187,336 | 481,457,792 | 54,402,911 | 475,531,908 | 52,440,133 |
| Lard, neutral.......do.... | 44,777,692 | 5,129,899 | 29,323,786 | 3,270,236 | 26,021,054 | 3,022,321 |
| Oils—lard oil.....gallons.. | 154,983 | 113,665 | 111,199 | 87,364 | 184,019 | 111,637 |
| Total pork.......... | ............ | 117,294,202 | ............ | 113,155,591 | ............ | 138,081,187 |
| Sausage and sausage meats— | | | | | | |
| Canned..........pounds.. | 1,117,400 | 145,440 | 1,446,582 | 202,120 | 1,821,958 | 307,726 |
| Other..............do.... | 6,893,918 | 940,305 | 4,562,983 | 755,794 | 5,183,525 | 845,661 |
| Sausage casings.......do.... | 26,203,391 | 3,901,428 | 30,002,206 | 4,077,882 | 30,818,551 | 4,859,815 |
| Stearin..............do.... | 3,744,886 | 323,376 | 2,724,181 | 234,121 | 12,750,907 | 1,308,605 |
| All other.................. | ............ | 1,935,860 | ............ | 1,685,351 | ............ | 2,403,842 |
| Total packing-house products.......... | ............ | 162,706,355 | ............ | 154,487,871 | ............ | ............ |
| Poultry and game............ | ............ | 1,303,379 | ............ | 913,632 | ............ | 1,187,771 |
| Silk waste. (*See* Fibers, animal.) | | | | | | |
| Wool. (*See* Fibers, animal.) | | | | | | |
| Total animal matter.... | ............ | 179,985,199 | ............ | 169,147,048 | ............ | ............ |
| VEGETABLE MATTER. | | | | | | |
| Breadstuffs. (*See* Grain and grain products.) | | | | | | |
| Broom corn........long tons.. | 4,113 | 389,219 | 2,959 | 327,420 | 3,764 | 368,051 |
| Cocoa, ground or prepared, and chocolate.............. | ............ | 376,336 | ............ | 336,940 | ............ | 1,934,166 |
| Coffee: | | | | | | |
| Green or raw......pounds.. | 50,723,958 | 8,679,422 | 52,649,233 | 8,550,642 | 49,177,146 | 6,841,575 |
| Roasted or prepared..do.... | 1,469,043 | 331,370 | 1,815,835 | 427,009 | 2,421,664 | 461,030 |
| Total coffee.......do.... | 52,193,001 | 9,010,792 | 54,465,068 | 8,977,651 | 51,598,810 | 7,302,605 |
| Cotton: | | | | | | |
| Sea island........bales.... | 11,843 | 1,078,274 | 19,186 | 1,619,847 | 6,158 | 484,465 |
| Sea island........pounds.. | 4,412,470 | | 7,420,455 | | 2,437,602 | |
| Upland..........bales.... | 8,712,729 | 546,278,921 | 9,146,114 | 608,855,454 | 8,201,189 | 372,068,490 |
| Upland..........pounds.. | 4,557,883,205 | | 4,753,520,083 | | 4,288,295,920 | |
| Linters..........bales.... | (1) | (1) | (1) | (1) | 218,950 | 3,665,017 |
| Linters..........pounds.. | | | | | 112,844,971 | |
| Total cotton......do.... | 4,562,295,675 | 547,357,195 | 4,760,940,538 | 610,475,301 | 4,403,578,499 | 376,217,972 |
| Flavoring extracts and fruit juices.................... | ............ | 133,990 | ............ | 106,892 | ............ | ............ |
| Flowers, cut................ | ............ | 101,036 | ............ | 121,287 | ............ | ............ |
| Forest products: | | | | | | |
| Bark, and extract of, for tanning— | | | | | | |
| Bark...........long tons.. | 1,683 | 46,499 | 1,212 | 26,939 | ............ | ............ |
| Bark, extracts of.......... | ............ | 524,063 | ............ | 639,941 | ............ | 2,226,457 |
| Total bark, etc.......... | ............ | 570,562 | ............ | 666,880 | ............ | ............ |
| Charcoal.................. | ............ | 73,030 | ............ | 81,997 | ............ | ............ |
| Moss...................... | ............ | 69,609 | ............ | 51,006 | ............ | ............ |

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[1] Included in "Upland."

TABLE 183.—*Agricultural exports (domestic) of the United States during the 3 years ending June 30, 1915*—Continued.

| Article exported. | Year ending June 30— | | | | | |
|---|---|---|---|---|---|---|
| | 1913 | | 1914 | | 1915 (preliminary). | |
| | Quantity. | Value. | Quantity. | Value. | Quantity. | Value. |
| VEGETABLE MATTER—contd. | | | | | | |
| Forest products—Continued. | | | | | | |
| Naval stores— | | | | | | |
| Rosin............barrels.. | 2,806,046 | $17,359,145 | 2,417,950 | $11,217,316 | 1,372,316 | $6,220,321 |
| Tar, turpentine, and pitch..........barrels.. | 62,346 | 317,491 | 351,353 | 568,891 | 239,661 | 430,612 |
| Turpentine, spirits of, gallons................ | 21,039,597 | 8,794,656 | 18,900,704 | 8,095,958 | 9,464,120 | 4,476,306 |
| Total naval stores..... | ............ | 26,471,292 | ............ | 19,882,165 | ............ | 11,127,239 |
| Wood— | | | | | | |
| Logs— | | | | | | |
| Hickory.........M feet.. | 8,293 | 309,896 | 8,425 | 297,613 | 2,020 | 73,786 |
| Oak..............do.... | 3,139 | 125,818 | 1,872 | 63,850 | 226 | 10,563 |
| Walnut...........do.... | 12,711 | 692,665 | 6,951 | 382,059 | 1,090 | 78,338 |
| Other............do.... | 149,381 | 3,095,029 | 120,819 | 2,512,501 | 41,175 | 720,836 |
| Total...........do.... | 173,524 | 4,223,408 | 138,067 | 3,256,023 | 44,511 | 883,523 |
| Lumber— | | | | | | |
| Boards, deals, and planks— | | | | | | |
| Cypress.......M feet.. | 14,788 | 455,649 | 14,098 | 420,982 | 10,078 | 319,065 |
| Fir.............do.... | 665,295 | 8,650,747 | 680,380 | 8,709,140 | 368,886 | 4,251,620 |
| Gum...........do.... | 84,520 | 2,580,286 | 70,714 | 2,164,017 | 24,588 | 715,756 |
| Oak...........do.... | 287,855 | 13,377,912 | 231,308 | 10,644,310 | 97,397 | 4,870,864 |
| Pine— | | | | | | |
| White........do.... | 49,283 | 1,661,396 | 43,878 | 1,606,864 | 18,398 | 662,786 |
| Yellow— | | | | | | |
| Pitch pine..do.... | 869,737 | 18,596,796 | 911,223 | 19,521,719 | 403,254 | 7,565,272 |
| Short-leaf pine, M feet.......... | 47,517 | 1,086,503 | 22,453 | 634,103 | 5,261 | 160,219 |
| Other pine, M feet.......... | 228,365 | 5,211,158 | 127,289 | 3,001,399 | 49,716 | 1,123,212 |
| Poplar........M feet.. | 37,652 | 1,719,274 | 30,860 | 1,448,622 | 19,891 | 962,248 |
| Redwood.......do.... | 51,903 | 1,355,340 | 67,155 | 1,917,315 | 36,419 | 1,102,532 |
| Spruce.........do.... | 20,020 | 619,837 | 18,105 | 557,838 | 15,610 | 462,087 |
| Other..........do.... | 193,373 | 6,661,021 | 187,833 | 6,948,239 | 79,707 | 2,925,984 |
| Total.........do.... | 2,550,308 | 61,975,919 | 2,405,296 | 57,574,548 | 1,129,205 | 25,121,645 |
| Joists and scantling, M feet................ | 25,925 | 479,969 | 12,143 | 206,919 | 6,007 | 103,456 |
| Railroad ties..number.. | 5,416,713 | 2,616,563 | 5,123,004 | 2,564,543 | 3,874,298 | 2,036,200 |
| Shingles.............M.. | 106,903 | 261,058 | 46,964 | 112,463 | 11,291 | 30,578 |
| Shooks— | | | | | | |
| Box.........number.. | 13,389,638 | 1,366,649 | 11,149,532 | 1,270,477 | 11,692,495 | 1,303,127 |
| Other...........do.... | 1,710,095 | 3,037,943 | 867,805 | 1,542,272 | 620,043 | 1,024,093 |
| Total shooks..do.... | 15,099,733 | 4,404,592 | 12,017,337 | 2,812,749 | 12,312,538 | 2,327,220 |
| Staves and heading— | | | | | | |
| Heading............... | ............ | 346,258 | ............ | 332,662 | ............ | 258,670 |
| Staves......number.. | 89,005,624 | 7,325,535 | 77,150,535 | 5,852,230 | 39,297,268 | 2,481,592 |
| Total staves and heading.......... | ............ | 7,671,793 | ............ | 6,184,892 | ............ | 2,740,262 |
| Other.................... | ............ | 3,087,005 | ............ | 3,028,642 | ............ | 1,650,760 |
| Total lumber....... | ............ | 80,496,899 | ............ | 72,484,756 | ............ | ............ |
| Timber— | | | | | | |
| Hewn..........M feet.. | 34,502 | 933,887 | 29,859 | 788,327 | 6,118 | 163,106 |
| Sawed— | | | | | | |
| Pitch pine......do.... | 447,420 | 9,516,618 | 390,149 | 7,821,364 | 159,064 | 2,785,379 |
| Other..........do.... | 29,715 | 700,072 | 21,158 | 562,720 | 8,607 | 229,491 |
| Total timber..do.... | 511,637 | 11,150,577 | 441,166 | 9,172,411 | 173,789 | 3,177,976 |
| All other, including firewood................ | ............ | 228,244 | ............ | 201,089 | ............ | 156,284 |
| Total wood......... | ............ | 96,099,128 | ............ | 85,144,279 | ............ | ............ |

**TABLE 183.**—*Agricultural exports (domestic) of the United States during the 3 years ending June 30, 1915*—Continued.

| Article exported. | Year ending June 30— | | | | | |
|---|---|---|---|---|---|---|
| | 1913 | | 1914 | | 1915 (preliminary). | |
| | Quantity. | Value. | Quantity. | Value. | Quantity. | Value. |
| VEGETABLE MATTER—contd. | | | | | | |
| Forest products—Continued. | | | | | | |
| Wood alcohol....gallons.... | 1,837,173 | $788,143 | 1,598,776 | $652,486 | 944,374 | $438,846 |
| Wood pulp......pounds.... | 41,475,557 | 764,020 | 26,961,254 | 529,741 | 8,410 | 369,969 |
| Total forest products.... | ............ | 124,835,784 | ............ | 106,978,554 | ............ | ............ |
| Fruits: | | | | | | |
| Fresh or dried— | | | | | | |
| Apples, dried....pounds.. | 41,574,562 | 2,898,211 | 33,566,160 | 2,628,445 | 42,589,169 | 3,270,658 |
| Apples, fresh.....barrels.. | 2,150,132 | 7,898,634 | 1,506,569 | 6,089,701 | 2,351,501 | 8,087,466 |
| Apricots, dried...pounds.. | 35,016,730 | 3,513,473 | 17,401,692 | 1,937,771 | 23,764,342 | 2,241,061 |
| Berries.................. | ............ | 574,449 | ............ | 717,079 | ............ | 535,479 |
| Lemons...........boxes.. | 81,919 | 399,409 | 70,075 | 308,707 | 122,914 | 372,781 |
| Oranges............do.... | 1,063,233 | 2,976,520 | 1,558,921 | 3,824,889 | 1,759,405 | 3,851,013 |
| Peaches, dried...pounds.. | 6,529,633 | 444,879 | 6,712,296 | 449,549 | 14,452,055 | 834,813 |
| Pears, fresh............ | ............ | 796,913 | ............ | 1,402,924 | ............ | 992,497 |
| Prunes..........pounds.. | 117,950,875 | 6,655,870 | 60,813,711 | 4,662,546 | 43,478,892 | 3,274,197 |
| Raisins.............do.... | 28,120,507 | 1,512,642 | 14,766,416 | 997,575 | 24,845,414 | 1,718,547 |
| Other.................. | ............ | 2,893,395 | ............ | 2,922,740 | ............ | 2,717,449 |
| Total fresh or dried..... | ............ | 30,564,395 | ............ | 25,941,926 | ............ | 27,895,961 |
| Preserved— | | | | | | |
| Canned.................. | ............ | 5,599,373 | ............ | 4,863,946 | ............ | 6,064,765 |
| Other.................... | ............ | 181,749 | ............ | 224,841 | ............ | 269,180 |
| Total preserved......... | ............ | 5,781,122 | ............ | 5,088,787 | ............ | 6,333,945 |
| Total fruits............ | ............ | 36,345,517 | ............ | 31,030,713 | ............ | 34,229,906 |
| Ginseng.............pounds.. | 221,901 | 1,665,731 | 224,605 | 1,832,686 | 103,184 | 919,931 |
| Glucose and grape sugar: | | | | | | |
| Glucose...........pounds.. | 158,365,604 | 3,682,371 | 162,680,378 | 3,766,284 | 125,434,878 | 3,103,561 |
| Grape sugar..........do.... | 41,783,642 | 970,025 | 36,850,496 | 799,635 | 33,027,630 | 781,672 |
| Grain and grain products: | | | | | | |
| Grain— | | | | | | |
| Barley...........bushels.. | 17,536,703 | 11,411,819 | 6,644,747 | 4,253,129 | 26,754,522 | 18,184,079 |
| Buckwheat.........do.... | 1,347 | 1,503 | 580 | 695 | 389,643 | 396,987 |
| Corn................do... | 49,064,967 | 28,800,544 | 9,380,855 | 7,008,028 | 48,786,291 | 39,339,064 |
| Oats................do.... | 33,759,177 | 13,206,247 | 1,859,949 | 757,527 | 97,169,551 | 57,479,964 |
| Rye.................do.... | 1,822,962 | 1,260,384 | 2,222,934 | 1,555,012 | 12,544,888 | 14,733,409 |
| Wheat..............do.... | 91,602,974 | 89,036,428 | 92,393,775 | 87,953,456 | 259,642,533 | 333,552,226 |
| Total grain.......do.... | 193,788,130 | 143,716,025 | 112,502,840 | 101,527,847 | 445,287,428 | 463,685,729 |
| Grain products— | | | | | | |
| Bran and middlings, long tons............... | 6,179 | 170,733 | 2,570 | 71,043 | 11,426 | 329,425 |
| Breadstuff preparations— | | | | | | |
| Bread and biscuit, pounds............... | 12,532,480 | 720,067 | 12,645,551 | 728,447 | 11,687,452 | 702,509 |
| Other.................. | ............ | 2,358,864 | ............ | 2,323,412 | ............ | 4,306,899 |
| Total breadstuff preparations............ | ............ | 3,078,931 | ............ | 3,051,859 | ............ | 5,009,408 |
| Distillers' and brewers' grains and malt sprouts, long tons............... | 79,160 | 2,061,540 | 59,788 | 1,467,028 | 7,590 | 177,987 |
| Malt............bushels.. | 370,957 | 300,489 | 330,608 | 270,059 | ............ | ............ |
| Meal and flour— | | | | | | |
| Corn meal......barrels.. | 428,794 | 1,444,539 | 336,241 | 1,185,891 | 470,503 | 1,923,214 |
| Oatmeal.......pounds.. | 48,533,350 | 1,514,848 | 15,998,286 | 569,204 | 68,034,978 | 2,406,068 |
| Rye flour.......barrels.. | 5,296 | 21,311 | 8,293 | 31,119 | 80,315 | 416,182 |
| Wheat flour......do.... | 11,394,805 | 53,171,537 | 11,821,461 | 54,454,175 | 16,183,765 | 94,869,343 |
| Total meal and flour... | ............ | 56,152,235 | ............ | 56,240,389 | ............ | 99,614,807 |

TABLE 183.—*Agricultural exports (domestic) of the United States during the 3 years ending June 30, 1915*—Continued.

| Article exported. | Year ending June 30— | | | | | |
|---|---|---|---|---|---|---|
| | 1913 | | 1914 | | 1915 (preliminary). | |
| | Quantity. | Value. | Quantity. | Value. | Quantity. | Value. |
| VEGETABLE MATTER—contd. | | | | | | |
| Grain and grain products—Continued. | | | | | | |
| Grain products—Continued. | | | | | | |
| Mill feed.......long tons.. | 156,142 | $4,180,133 | 67,690 | $1,840,011 | 25,459 | $787,048 |
| All other.................. | ............ | 862,735 | ............ | 346,888 | ............ | 1,045,396 |
| Total grain products.... | ............ | 66,806,796 | ............ | 63,287,277 | ............ | ............ |
| Total grain and grain products............ | ............ | 210,523,721 | ............ | 164,815,124 | ............ | ............ |
| Hay...............long tons.. | 60,720 | 964,429 | 50,151 | 827,205 | 105,508 | 1,980,297 |
| Hops.................pounds.. | 17,591,195 | 4,764,713 | 24,262,896 | 6,953,529 | 16,210,443 | 3,848,020 |
| Lard compounds. (*See* Meat and meat products.) | | | | | | |
| Liquors, alcoholic: | | | | | | |
| Distilled spirits— | | | | | | |
| Alcohol, including cologne spirits....proof gallons.. | 151,232 | 58,346 | 187,845 | 67,728 | 200,455 | 108,985 |
| Rum...............do.... | 1,268,054 | 1,667,567 | 1,388,738 | 1,815,121 | 1,240,804 | 1,533,552 |
| Whisky— | | | | | | |
| Bourbon..........do.... | 60,252 | 119,429 | 47,775 | 92,331 | 34,823 | 69,497 |
| Rye..............do.... | 177,341 | 327,950 | 134,152 | 259,523 | 86,564 | 168,386 |
| Total whisky...do.... | 237,593 | 447,379 | 181,927 | 351,854 | 121,387 | 237,883 |
| Other..............do.... | 29,271 | 44,867 | 25,408 | 41,129 | 30,152 | 46,599 |
| Total distilled spirits, proof gallons.......... | 1,686,150 | 2,218,159 | 1,783,918 | 2,275,832 | ............ | ............ |
| Malt liquors— | | | | | | |
| Bottled.....dozen quarts.. | 866,684 | 1,301,244 | 962,627 | 1,405,581 | 696,690 | 1,010,222 |
| Unbottled........gallons.. | 312,965 | 70,219 | 326,946 | 79,595 | 245,494 | 71,890 |
| Total malt liquors...... | ............ | 1,371,463 | ............ | 1,485,176 | ............ | 1,082,112 |
| Wines.............gallons.. | 1,075,151 | 418,668 | 941,357 | 373,412 | 819,310 | 332,369 |
| Total alcoholic liquors... | ............ | 4,008,290 | ............ | 4,134,420 | ............ | ............ |
| Malt. (*See* Grain and grain products.) | | | | | | |
| Malt liquors. (*See* Liquors, alcoholic.) | | | | | | |
| Malt sprouts. (*See* Grain and grain products.) | | | | | | |
| Nursery stock................ | ............ | 459,769 | ............ | 315,065 | ............ | 170,218 |
| Nuts: | | | | | | |
| Peanuts...........pounds.. | 7,301,381 | 366,016 | 8,054,817 | 421,367 | 5,875,076 | 325,725 |
| Other...................... | ............ | 367,569 | ............ | 398,312 | ............ | 377,486 |
| Total nuts............ | ............ | 733,585 | ............ | 819,679 | ............ | 703,211 |
| Oil cake and oil-cake meal: | | | | | | |
| Corn...............pounds.. | 76,262,845 | 1,131,330 | 59,030,623 | 909,407 | 44,026,125 | 798,206 |
| Cottonseed...........do.... | 1,128,092,367 | 15,225,798 | 799,974,252 | 11,007,441 | 1,479,065,015 | 18,906,370 |
| Flaxseed or linseed...do.... | 838,119,654 | 12,982,423 | 662,868,639 | 9,650,379 | 524,794,434 | 9,048,061 |
| Other................do.... | 6,886,270 | 104,701 | 8,484,936 | 100,445 | 9,900,878 | 126,414 |
| Total............do.... | 2,049,361,136 | 29,444,252 | 1,530,358,450 | 21,667,672 | ............ | ............ |
| Oils, vegetable: | | | | | | |
| Fixed or expressed— | | | | | | |
| Corn.............pounds.. | 19,839,222 | 1,292,009 | 18,281,576 | 1,307,204 | 17,689,635 | 1,302,159 |
| Cottonseed.........do.... | 315,232,892 | 20,736,972 | 192,963,079 | 13,843,179 | 318,366,525 | 21,872,948 |
| Linseed..........gallons.. | 1,733,925 | 874,461 | 239,188 | 134,540 | 1,212,133 | 660,089 |
| Other.................... | ............ | 420,368 | ............ | 338,956 | ............ | 1,196,852 |
| Total fixed or expressed. | ............ | 23,323,810 | ............ | 15,623,879 | ............ | ............ |

**Table 183.**—*Agricultural exports (domestic) of the United States during the 3 years ending June 30, 1915*—Continued.

| Article exported. | Year ending June 30— | | | | | |
|---|---|---|---|---|---|---|
| | 1913 | | 1914 | | 1915 (preliminary). | |
| | Quantity. | Value. | Quantity. | Value. | Quantity. | Value. |
| VEGETABLE MATTER—contd. | | | | | | |
| Oils, vegetable—Continued. | | | | | | |
| Volatile, or essential— | | | | | | |
| Peppermint.....pounds.. | 134,663 | $395,551 | 117,809 | $397,050 | 184,981 | $384,593 |
| Other | ........... | 325,040 | ........... | 230,557 | ........... | 413,104 |
| Total volatile, or essential | ........... | 720,591 | ........... | 627,607 | ........... | 797,697 |
| Total vegetable oils | ........... | 24,044,401 | ........... | 16,251,486 | ........... | ........... |
| Rice, rice meal, etc.: | | | | | | |
| Rice...............pounds.. | 24,801,280 | 765,447 | 18,223,264 | 721,046 | 75,448,635 | 3,158,335 |
| Rice bran, meal, and polish, pounds | 14,106,777 | 109,660 | 4,191,062 | 36,274 | 2,031,430 | 15,541 |
| Rice hulls | ........... | 194,757 | ........... | 126,888 | ........... | ........... |
| Total | ........... | 1,069,864 | ........... | 884,208 | ........... | ........... |
| Roots, herbs, and barks, n. e. s. | ........... | 424,312 | ........... | 513,071 | ........... | 470,090 |
| Seeds: | | | | | | |
| Cotton seed.......pounds.. | 24,048,647 | 328,988 | 16,342,384 | 215,115 | 6,314,439 | 94,237 |
| Flaxseed, or linseed, bushels | 16,894 | 26,699 | 305,546 | 436,874 | 4,145 | 9,748 |
| Grass and clover seed— | | | | | | |
| Clover...........pounds.. | 5,407,594 | 941,622 | 4,640,852 | 691,437 | 9,750,064 | 1,563,304 |
| Timothy...........do.... | 17,559,653 | 844,418 | 12,480,294 | 688,118 | 17,333,144 | 1,153,066 |
| Other.............do.... | 8,226,512 | 895,276 | 5,156,801 | 600,368 | 4,342,926 | 451,595 |
| Total grass and clover seed.........pounds.. | 31,193,759 | 2,681,316 | 22,277,947 | 1,979,923 | 31,426,134 | 3,167,965 |
| All other seeds | ........... | 527,834 | ........... | 558,833 | ........... | 589,114 |
| Total seeds | ........... | 3,564,837 | ........... | 3,190,745 | ........... | ........... |
| Spices | ........... | 92,962 | ........... | 84,427 | ........... | ........... |
| Spirits, distilled. (*See* Liquors, alcoholic.) | | | | | | |
| Starch...............pounds.. | 110,897,591 | 2,609,716 | 76,713,779 | 1,825,230 | 107,036,638 | 2,939,453 |
| Straw..............long tons.. | 634 | 5,632 | 288 | 4,714 | ........... | ........... |
| Sugar, molasses, and sirup: | | | | | | |
| Molasses...........gallons.. | 2,145,613 | 255,973 | 1,002,441 | 175,498 | 1,148,741 | 145,274 |
| Sirup..................do.. | 14,309,029 | 1,937,648 | 11,630,528 | 1,491,639 | 11,439,133 | 1,653,495 |
| Sugar— | | | | | | |
| Refined..........pounds.. | 43,994,761 | 1,681,302 | 50,895,726 | 1,839,983 | 549,007,405 | 25,615,016 |
| Total sugar, molasses, and sirup | ........... | 3,874,923 | ........... | 3,507,120 | ........... | 27,413,785 |
| Tobacco: | | | | | | |
| Leaf...............pounds.. | 414,160,356 | 49,202,456 | 446,944,435 | 53,903,336 | 347,997,276 | 44,479,890 |
| Stems and trimmings.do.... | 4,636,550 | 151,139 | 2,805,547 | 60,334 | 348,815 | 13,939 |
| Total.............do.... | 418,796,906 | 49,353,595 | 449,749,982 | 53,963,670 | 348,346,091 | 44,493,829 |
| Vegetables: | | | | | | |
| Fresh or dried— | | | | | | |
| Beans and peas..bushels.. | 400,868 | 1,080,066 | 314,655 | 875,493 | 1,214,281 | 3,638,526 |
| Onions.............do.... | 571,074 | 397,516 | 386,322 | 435,953 | 727,983 | 602,585 |
| Potatoes...........do.... | 2,028,261 | 1,646,176 | 1,794,073 | 1,463,514 | 3,135,474 | 2,345,731 |
| Total fresh or dried, bushels | 3,000,203 | 3,123,758 | 2,495,050 | 2,774,960 | 5,077,738 | 6,586,842 |
| Prepared or preserved— | | | | | | |
| Canned | ........... | 1,819,281 | ........... | 1,520,879 | ........... | 1,898,840 |
| Pickles and sauces | ........... | 837,571 | ........... | 928,611 | ........... | 959,016 |
| Other | ........... | 1,572,927 | ........... | 1,711,950 | ........... | 1,368,453 |
| Total prepared or preserved | ........... | 4,229,779 | ........... | 4,161,440 | ........... | 4,226,309 |
| Total vegetables | ........... | 7,353,537 | ........... | 6,936,400 | ........... | 10,813,151 |

TABLE 183.—*Agricultural exports (domestic) of the United States during the 3 years ending June 30, 1915*—Continued.

| Article exported. | Year ending June 30— | | | | | |
|---|---|---|---|---|---|---|
| | 1913 | | 1914 | | 1915 (preliminary). | |
| | Quantity. | Value. | Quantity. | Value. | Quantity. | Value. |
| VEGETABLE MATTER. | | | | | | |
| Vinegar..............gallons.. | 213,786 | $63,836 | 125,666 | $25,112 | ........... | ........... |
| Wines. (*See* Liquors, alcoholic.) | | | | | | |
| Yeast.......................... | ........... | 278,200 | ........... | 332,895 | ........... | ........... |
| Total vegetable matter, including forest products.......... | ........... | 1,068,502,570 | ........... | 1,051,805,141 | ........... | ........... |
| Total vegetable matter, excluding forest products.......... | ........... | 943,666,786 | ........... | 944,826,587 | ........... | ........... |
| Total agricultural exports, including forest products.......... | ........... | 1,248,487,760 | ........... | 1,220,952,189 | ........... | ........... |
| Total agricultural exports, excluding forest products.......... | ........... | 1,123,651,985 | ........... | 1,113,973,635 | ........... | ........... |

TABLE 184.—*Foreign trade of the United States in agricultural products, 1852–1915.*

[Compiled from reports of Foreign Commerce and Navigation of the United States. All values are gold.]

| Year ending June 30— | Agricultural exports.[1] | | | Agricultural imports.[1] | | Excess of agricultural exports (+) or of imports (−). |
|---|---|---|---|---|---|---|
| | Domestic. | | Foreign. | Total. | Percentage of all imports. | |
| | Total. | Percentage of all domestic exports. | | | | |
| Average: | | | | | | |
| 1852–1856.................. | $164,895,146 | 80.9 | $8,059,875 | $77,847,158 | 29.1 | +$95,107,863 |
| 1857–1861.................. | 215,708,845 | 81.1 | 10,173,833 | 121,018,143 | 38.2 | +104,864,535 |
| 1862–1866.................. | 148,865,540 | 75.7 | 9,287,669 | 122,221,547 | 43.0 | + 35,931,662 |
| 1867–1871.................. | 250,713,058 | 76.9 | 8,538,101 | 179,774,000 | 42.3 | + 79,477,159 |
| 1872–1876.................. | 396,666,397 | 78.5 | 8,853,247 | 263,155,573 | 46.5 | +142,364,071 |
| 1877–1881.................. | 591,350,518 | 80.4 | 8,631,780 | 266,383,702 | 50.4 | +333,598,596 |
| 1882–1886.................. | 557,472,922 | 76.3 | 9,340,463 | 311,707,564 | 46.8 | +255,105,821 |
| 1887–1891.................. | 573,286,616 | 74.7 | 6,982,328 | 366,950,109 | 43.3 | +213,318,835 |
| 1892–1896.................. | 638,748,318 | 73.0 | 8,446,491 | 398,332,043 | 51.6 | +248,862,766 |
| 1897–1901.................. | 827,566,147 | 65.9 | 10,961,539 | 376,549,697 | 50.2 | +461,977,989 |
| 1902–1906.................. | 879,541,247 | 59.5 | 11,922,292 | 487,881,038 | 46.3 | +403,582,501 |
| 1907–1011.................. | 975,398,554 | 53.9 | 12,126,228 | 634,570,734 | 45.2 | +352,954,048 |
| 1901........................ | 951,628,331 | 65.2 | 11,293,045 | 391,931,051 | 47.6 | +570,990,325 |
| 1902........................ | 857,113,533 | 63.2 | 10,308,306 | 413,744,557 | 45.8 | +453,677,282 |
| 1903........................ | 878,480,557 | 63.1 | 13,505,343 | 456,199,325 | 44.5 | +435,786,575 |
| 1904........................ | 859,160,264 | 59.9 | 12,625,026 | 461,434,851 | 46.6 | +410,350,439 |
| 1905........................ | 826,904,777 | 55.4 | 12,316,525 | 553,851,214 | 49.6 | +285,370,088 |
| 1906........................ | 976,047,104 | 56.8 | 10,856,259 | 554,175,242 | 45.2 | +432,728,121 |
| 1907........................ | 1,054,405,416 | 56.9 | 11,613,519 | 626,836,808 | 48.7 | +439,182,127 |
| 1908........................ | 1,017,396,404 | 55.5 | 10,298,514 | 539,690,121 | 45.2 | +488,004,797 |
| 1909........................ | 903,238,122 | 55.1 | 9,584,934 | 638,612,692 | 48.7 | +274,210,364 |
| 1910........................ | 871,158,425 | 50.9 | 14,469,627 | 687,509,115 | 44.2 | +198,118,937 |
| 1911........................ | 1,030,794,402 | 51.2 | 14,664,548 | 680,204,932 | 44.5 | +365,254,018 |
| 1912........................ | 1,050,627,131 | 48.4 | 12,107,656 | 783,457,471 | 47.4 | +279,277,316 |
| 1913........................ | 1,123,651,985 | 46.3 | 15,029,444 | 815,300,510 | 45.0 | +323,380,919 |
| 1914........................ | 1,113,973,635 | 47.8 | 17,729,462 | 924,246,616 | 48.8 | +207,456,481 |
| 1915........................ | .......... | .......... | .......... | .......... | .......... | .......... |

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[1] Not including forest products.

**Table 185.**—*Value of principal groups of farm and forest products exported from and imported into the United States, 1913 to 1915.*

[Compiled from reports on the Foreign Commerce of the United States.]

| Article. | Exports (domestic merchandise). | | | Imports. | | |
|---|---|---|---|---|---|---|
| | Year ending June 30— | | | | | |
| | 1913 | 1914 | 1915 (preliminary). | 1913 | 1914 | 1915 (preliminary). |
| FARM PRODUCTS. | | | | | | |
| ANIMAL MATTER. | | | | | | |
| Animals, live | $7,080,122 | $5,803,659 | $77,953,686 | $9,585,791 | $24,712,111 | $22,279,081 |
| Dairy products | 3,220,893 | 2,965,934 | 14,049,879 | 10,693,107 | 15,403,143 | 14,704,277 |
| Eggs | 4,391,653 | 3,734,087 | 5,003,764 | 205,832 | 1,089,164 | 438,760 |
| Feathers and downs, crude | 690,612 | 640,020 | 281,806 | 8,237,382 | 4,871,663 | 2,502,623 |
| Fibers, animal: | | | | | | |
| Silk | 9,704 | 8,178 | | 84,914,717 | 100,930,025 | 83,180,557 |
| Wool | 22,625 | 124,127 | | 35,579,823 | 53,190,267 | 68,242,568 |
| Packing-house products | 162,706,355 | 154,487,871 | | 133,088,110 | 154,969,389 | |
| Other animal matter | 1,863,235 | 1,383,172 | | 1,401,927 | 3,563,922 | |
| Total animal matter | 179,985,199 | 169,147,048 | | 283,706,689 | 358,729,684 | |
| VEGETABLE MATTER. | | | | | | |
| Argols or wine lees | | | | 2,621,632 | 3,228,674 | 3,094,380 |
| Cocoa and chocolate | 376,336 | 336,940 | 1,934,166 | 18,176,720 | 21,503,983 | 23,477,156 |
| Coffee | 9,010,792 | 8,977,651 | 7,302,605 | 118,963,209 | 110,725,392 | 106,765,644 |
| Cotton | 547,357,195 | 610,475,301 | 376,217,972 | 22,987,318 | 19,456,588 | 23,208,960 |
| Fibers, vegetable, other | | | | 49,078,659 | 54,349,995 | 40,420,017 |
| Fruits | 36,345,517 | 31,030,713 | 34,229,906 | 28,657,084 | 33,638,334 | 27,081,396 |
| Ginseng | 1,665,731 | 1,832,686 | 919,931 | | | |
| Glucose and grape sugar | 4,652,396 | 4,565,919 | 3,885,233 | | | |
| Grain and grain products | 210,523,721 | 164,815,124 | 570,649,800 | 8,732,686 | 27,442,277 | 12,518,356 |
| Hay | 964,429 | 827,205 | 1,980,297 | 1,514,311 | 1,634,390 | 228,906 |
| Hops | 4,764,713 | 6,953,529 | 3,848,020 | 2,852,865 | 2,790,516 | 2,778,735 |
| Indigo | | | | 1,102,897 | 1,093,226 | 1,596,978 |
| Licorice root | | | | 1,806,066 | 2,047,192 | 1,252,989 |
| Liquors, alcoholic | 4,008,290 | 4,134,420 | 3,396,500 | 20,743,129 | 20,347,546 | 13,404,903 |
| Nursery stock (plants, trees, etc.) | 459,769 | 315,065 | 170,218 | 3,209,067 | 3,606,808 | 3,748,666 |
| Nuts | 733,585 | 819,679 | 703,211 | 13,979,905 | 19,888,601 | 16,819,799 |
| Oil cake and oil cake meal | 29,444,252 | 21,667,672 | 28,879,051 | 141,137 | 120,078 | |
| Oil, vegetable | 24,044,401 | 16,251,486 | 25,831,745 | 28,129,998 | 32,320,782 | 24,772,113 |
| Opium, crude | | | | 2,565,965 | 1,810,429 | 2,445,005 |
| Rice, rice flour, meal, and broken rice | 875,107 | 884,208 | 3,173,876 | 5,916,864 | 7,473,707 | 6,304,216 |
| Sago, tapioca, etc | | | | 2,187,217 | 1,641,540 | 1,434,219 |
| Seeds | 3,564,837 | 3,190,745 | 3,861,064 | 17,425,533 | 20,084,184 | 23,054,820 |
| Spices | 92,962 | 84,427 | | 6,187,136 | 5,595,509 | 5,926,972 |
| Starch | 2,609,716 | 1,825,230 | 2,939,453 | 457,784 | 408,922 | 343,800 |
| Sugar, molasses, and sirup | 3,874,923 | 3,507,120 | 27,413,785 | 105,096,173 | 103,394,094 | 175,956,108 |
| Tea | | | | 17,433,688 | 16,735,302 | 17,512,619 |
| Tobacco | 49,353,595 | 53,963,670 | 44,493,829 | 35,938,511 | 35,038,520 | 27,156,665 |
| Vanilla beans | | | | 2,641,573 | 2,277,675 | 1,863,515 |
| Vegetables | 7,353,537 | 6,936,400 | 10,813,151 | 11,358,761 | 15,133,535 | 9,329,732 |
| Wax vegetable | | | | 1,146,077 | 1,049,126 | 1,012,402 |
| Other vegetable matter | 1,590,982 | 1,431,397 | | 541,856 | 680,007 | |
| Total vegetable matter | 943,666,786 | 944,826,587 | | 531,593,821 | 565,516,932 | |
| Total farm products | 1,123,651,985 | 1,113,973,635 | | 815,300,510 | 24,246,616 | |
| FOREST PRODUCTS. | | | | | | |
| Cork wood or cork bark | | | | 3,152,070 | 3,851,794 | 2,762,895 |
| Dye woods, and extracts of | | | | 897,908 | 793,926 | 1,142,031 |
| India rubber | | | | 90,170,316 | 71,219,851 | 83,030,269 |
| Gums, other than india rubber | | | | 22,622,509 | 15,620,780 | |
| Naval stores | 26,471,292 | 19,882,165 | 11,127,239 | 25,278 | 36,764 | |
| Tanning materials, n. e. s. | 570,562 | 666,880 | 2,226,457 | 4,329,594 | 4,368,041 | 5,343,263 |
| Wood: | | | | | | |
| Cabinet, unsawed | | | | 7,375,214 | 7,124,688 | 4,271,775 |
| Lumber | 80,496,899 | 72,484,756 | 34,010,121 | 23,160,669 | 22,436,585 | 23,452,870 |
| Pulp wood | | | | 6,954,952 | 7,245,466 | 6,572,899 |
| Timber and logs | 15,373,985 | 12,428,434 | 3,177,976 | 1,506,235 | 1,657,605 | 1,263,641 |
| Rattan and reeds | | | | 1,040,121 | 1,210,390 | 771,[illegible] |
| Wood pulp | 764,020 | 529,741 | 369,969 | 16,165,316 | 17,023,338 | 19,881,111 |
| Other forest products | 1,159,026 | 986,578 | | 3,102,262 | 2,672,072 | |
| Total forest products | 124,835,784 | 106,978,554 | | 180,502,444 | 155,261,300 | |
| Total farm and forest products | 1,248,487,769 | 1,220,952,189 | | 995,802,954 | 1,079,507,916 | |

## TABLE 186.—*Exports of selected domestic agricultural products, 1852–1915.*

[Compiled from reports of Foreign Commerce and Navigation of the United States. Where figures are lacking, either there were no exports or they were not separately classified for publication. "Beef salted or pickled," and "Pork, salted or pickled," barrels, 1851–1865, were reduced to pounds at the rate of 200 pounds per barrel, and tierces, 1855–1865, at the rate of 300 pounds per tierce; cottonseed oil, 1910, pounds reduced to gallons at the rate of 7.5 pounds per gallon. It is assumed that 1 barrel of corn meal is the product of 4 bushels of corn, and 1 barrel of wheat flour the product of 5 bushels of wheat prior to 1880 and of 4½ bushels of wheat in 1880 and subsequently.]

| Year ending June 30— | Cattle. | Cheese. | Packing-house products. | | | | |
|---|---|---|---|---|---|---|---|
| | | | Beef, cured—salted or pickled. | Beef, fresh. | Beef oils—oleo oil. | Beef tallow. | Beef and its products—total, as far as ascertainable.[1] |
| Average: | *Number.* | *Pounds.* | *Pounds.* | *Pounds.* | *Pounds.* | *Pounds.* | *Pounds.* |
| 1852–1856.. | 1,431 | 6,200,385 | 25,980,520 | ........... | ........... | 7,468,910 | 33,449,439 |
| 1857–1861.. | 20,294 | 13,906,430 | 26,985,880 | ........... | ........... | 13,214,614 | 40,200,494 |
| 1862–1866.. | 6,531 | 42,683,073 | 27,662,720 | ........... | ........... | 43,202,724 | 70,865,444 |
| 1867–1871.. | ........... | 52,880,978 | 26,954,656 | ........... | ........... | 27,577,269 | 54,531,925 |
| 1872–1876.. | 45,672 | 87,173,752 | 35,826,646 | ........... | ........... | 78,994,360 | 114,821,006 |
| 1877–1881.. | 127,045 | 129,670,479 | 40,174,613 | 69,601,120 | ........... | 96,822,695 | 218,709,967 |
| 1882–1886.. | 131,605 | 108,790,010 | 47,401,470 | 97,327,819 | 80,276,133 | 48,745,416 | 225,626,631 |
| 1887–1891.. | 244,394 | 86,354,842 | 65,613,851 | 136,447,554 | 50,482,249 | 91,608,126 | 411,797,859 |
| 1892–1896.. | 349,032 | 66,905,798 | 64,898,780 | 207,372,575 | 102,038,519 | 56,976,840 | 507,177,430 |
| 1897–1901.. | 415,488 | 46,108,704 | 52,242,288 | 305,626,184 | 139,373,402 | 86,082,497 | 637,268,235 |
| 1902–1906.. | 508,103 | 19,244,482 | 59,208,292 | 272,148,180 | 156,925,317 | 59,892,601 | 622,843,230 |
| 1907–1911.. | 253,867 | 9,152,083 | 46,187,175 | 144,799,735 | 170,530,432 | 66,356,232 | 448,024,017 |
| 1901........ | 459,218 | 39,813,517 | 55,312,632 | 351,748,333 | 161,651,413 | 77,166,889 | 705,104,772 |
| 1902........ | 392,884 | 27,203,184 | 48,632,727 | 301,824,473 | 138,546,088 | 34,065,758 | 596,254,520 |
| 1903........ | 402,178 | 18,987,178 | 52,801,220 | 254,795,963 | 126,010,339 | 27,368,924 | 546,055,344 |
| 1904........ | 593,409 | 23,335,172 | 57,584,710 | 299,579,671 | 165,183,839 | 76,924,174 | 663,147,095 |
| 1905........ | 567,806 | 10,134,424 | 55,934,705 | 236,486,568 | 145,228,245 | 63,536,992 | 575,874,718 |
| 1906........ | 584,239 | 16,562,451 | 81,088,098 | 268,054,227 | 209,658,075 | 97,567,156 | 732,884,572 |
| 1907........ | 423,051 | 17,285,230 | 62,645,281 | 281,651,502 | 195,337,176 | 127,857,739 | 689,752,420 |
| 1908........ | 349,210 | 8,439,031 | 46,958,367 | 201,154,105 | 212,541,157 | 91,397,507 | 579,303,478 |
| 1909........ | 207,542 | 6,822,842 | 44,494,210 | 122,952,671 | 179,985,246 | 53,332,767 | 418,844,332 |
| 1910........ | 139,430 | 2,846,709 | 36,554,266 | 75,729,666 | 126,091,675 | 29,379,992 | 286,295,874 |
| 1911........ | 150,100 | 10,366,605 | 40,283,749 | 42,510,731 | 138,696,906 | 29,813,154 | 265,923,983 |
| 1912........ | 105,506 | 6,337,559 | 38,087,907 | 15,264,320 | 126,467,124 | 39,451,419 | 283,924,626 |
| 1913........ | 24,714 | 2,599,058 | 25,856,919 | 7,362,388 | 92,849,757 | 30,586,350 | 166,468,844 |
| 1914........ | 18,376 | 2,427,577 | 23,265,974 | 6,394,404 | 97,017,065 | 15,812,831 | 148,487,828 |
| 1915........ | 5,484 | 54,069,917 | 31,874,743 | 170,440,934 | 80,481,946 | 20,239,988 | 383,564,402 |

| Year ending June 30— | Packing-house products. | | | | | Apples, fresh. | Corn and corn meal (in terms of grain.) |
|---|---|---|---|---|---|---|---|
| | Pork, cured—bacon. | Pork, cured—hams and shoulders. | Pork, cured—salted or pickled. | Pork—lard. | Pork and its products—total, as far as ascertainable.[2] | | |
| Average: | *Pounds.* | *Pounds.* | *Pounds.* | *Pounds.* | *Pounds.* | *Barrels.* | *Bushels.* |
| 1852–1856.. | 30,005,479 | ........... | 40,542,600 | 33,354,976 | 103,903,056 | 37,412 | 7,123,286 |
| 1857–1861.. | 30,583,297 | ........... | 34,854,400 | 37,965,993 | 103,403,690 | 57,045 | 6,557,610 |
| 1862–1866.. | 10,796,961 | ........... | 52,550,758 | 89,138,251 | 252,485,970 | 119,433 | 12,059,794 |
| 1867–1871.. | 45,790,113 | ........... | 28,879,085 | 58,579,373 | 128,248,571 | ........... | 9,924,285 |
| 1872–1876.. | 313,402,401 | ........... | 60,429,361 | 194,197,714 | 568,029,477 | 132,756 | 38,560,557 |
| 1877–1881.. | 643,633,709 | ........... | 85,968,138 | 331,457,591 | 1,075,793,475 | 509,735 | 88,190,080 |
| 1882–1886.. | 355,905,444 | 47,634,675 | 72,354,682 | 263,425,058 | 739,455,913 | 401,886 | 49,992,208 |
| 1887–1891.. | 419,935,416 | 60,697,365 | 73,984,682 | 381,388,854 | 936,247,966 | 522,511 | 54,606,277 |
| 1892–1896.. | 438,847,549 | 96,107,152 | 64,827,470 | 451,547,135 | 1,052,133,760 | 520,810 | 63,979,806 |
| 1897–1901.. | 536,287,266 | 200,853,226 | 112,788,498 | 652,418,143 | 1,528,138,779 | 779,980 | 192,531,873 |
| 1902–1906.. | 292,721,953 | 206,902,427 | 116,823,284 | 592,130,894 | 1,242,136,649 | 1,368,608 | 74,615,465 |
| 1907–1911.. | 209,005,144 | 189,603,211 | 90,809,879 | 519,746,378 | 1,028,996,659 | 1,225,655 | 56,568,080 |
| 1901........ | 456,122,741 | 216,571,803 | 138,643,611 | 611,357,514 | 1,462,369,849 | 883,673 | 181,405,473 |
| 1902........ | 383,150,624 | 227,653,232 | 115,896,275 | 556,840,222 | 1,337,315,909 | 459,719 | 28,028,688 |
| 1903........ | 207,336,000 | 214,183,365 | 95,287,374 | 490,755,821 | 1,042,119,570 | 1,656,129 | 76,639,261 |
| 1904........ | 249,665,941 | 194,948,864 | 112,224,861 | 561,302,643 | 1,146,255,441 | 2,018,262 | 58,222,061 |
| 1905........ | 262,246,635 | 203,458,724 | 118,887,189 | 610,238,899 | 1,220,031,970 | 1,499,942 | 90,293,483 |
| 1906........ | 361,210,563 | 194,267,949 | 141,820,720 | 741,516,886 | 1,464,960,356 | 1,208,989 | 119,893,833 |
| 1907........ | 250,418,699 | 209,481,496 | 166,427,409 | 627,559,660 | 1,268,065,412 | 1,539,267 | 86,368,228 |
| 1908........ | 241,189,929 | 221,769,634 | 149,505,937 | 603,413,770 | 1,237,210,760 | 1,049,545 | 55,063,860 |
| 1909........ | 244,578,674 | 212,170,224 | 52,354,980 | 528,722,933 | 1,053,142,056 | 896,279 | 37,665,040 |
| 1910........ | 152,163,107 | 146,885,385 | 40,031,599 | 362,927,671 | 707,110,062 | 922,078 | 38,128,498 |
| 1911........ | 156,675,310 | 157,709,316 | 45,729,471 | 476,107,857 | 879,455,006 | 1,721,106 | 65,614,522 |
| 1912........ | 208,574,208 | 204,044,491 | 56,321,469 | 532,255,865 | 1,071,951,724 | 1,456,881 | 41,797,291 |
| 1913........ | 200,993,584 | 159,544,687 | 53,749,023 | 519,025,384 | 984,696,710 | 2,150,132 | 50,780,143 |
| 1914........ | 193,964,252 | 165,881,791 | 45,543,085 | 481,457,792 | 921,913,029 | 1,506,569 | 10,725,819 |
| 1915........ | 346,718,227 | 206,701,114 | 45,655,574 | 475,581,908 | 1,106,180,488 | 2,351,501 | 50,668,303 |

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[1] Includes canned, cured, and fresh beef, oleo oil, oleomargarine, and tallow.

[2] Includes canned, fresh, salted or pickled pork, lard, neutral lard, bacon, and hams.

TABLE 186.—*Exports of selected domestic agricultural products, 1852–1915*—Continued.

| Year ending June 30— | Lard compounds. | Cotton. | Glucose and grape sugar. | Corn-oil cake and oil-cake meal. | Cottonseed-oil cake and oil-cake meal. | Prunes. | Tobacco. |
|---|---|---|---|---|---|---|---|
| Average: | *Pounds.* | *Pounds.* | *Pounds.* | *Pounds.* | *Pounds.* | *Pounds.* | *Pounds.* |
| 1852–1856 | ........... | 1,110,498,083 | ........... | ........... | ........... | ........... | 140,183,800 |
| 1857–1861 | ........... | 1,125,715,497 | ........... | ........... | ........... | ........... | 167,710,800 |
| 1862–1866 | ........... | 137,582,133 | ........... | ........... | ........... | ........... | 140,207,850 |
| 1867–1871 | ........... | 902,410,338 | ........... | ........... | ........... | ........... | 194,753,537 |
| 1872–1876 | ........... | 1,248,805,497 | ........... | ........... | ........... | ........... | 241,848,410 |
| 1877–1881 | ........... | 1,738,892,268 | ........... | ........... | ........... | ........... | 266,315,190 |
| 1882–1886 | ........... | 1,968,178,266 | 4,473,550 | ........... | ........... | ........... | 237,941,913 |
| 1887–1891 | ........... | 2,439,650,456 | 27,686,298 | ........... | ........... | ........... | 259,248,361 |
| 1892–1896 | ........... | 2,736,655,351 | 125,574,007 | ........... | ........... | ........... | 281,743,279 |
| 1897–1901 | 21,792,477 | 3,447,909,578 | 209,279,772 | ........... | 1,005,099,895 | ........... | 304,401,701 |
| 1902–1906 | 52,954,358 | 3,632,267,952 | 154,866,980 | 21,888,135 | 1,066,790,196 | 48,550,774 | 325,538,515 |
| 1907–1911 | 75,765,254 | 4,004,770,051 | 145,061,783 | 61,732,807 | 989,738,130 | 47,049,287 | 334,395,923 |
| 1901 | 23,359,966 | 3,359,062,360 | 204,209,974 | 12,703,209 | 1,258,687,317 | 10,021,564 | 315,787,782 |
| 1902 | 36,261,744 | 3,528,974,636 | 130,419,611 | 14,740,498 | 1,050,466,246 | 23,358,849 | 301,007,365 |
| 1903 | 46,130,004 | 3,569,141,969 | 126,239,981 | 8,093,222 | 1,100,392,988 | 66,385,215 | 368,184,084 |
| 1904 | 53,603,545 | 3,089,855,906 | 152,768,716 | 14,014,885 | 820,349,073 | 73,146,214 | 311,971,831 |
| 1905 | 61,215,187 | 4,339,322,077 | 175,250,580 | 24,171,127 | 1,251,907,996 | 54,993,849 | 334,302,091 |
| 1906 | 67,621,310 | 3,634,045,170 | 189,656,011 | 48,420,942 | 1,110,834,678 | 24,809,744 | 312,227,202 |
| 1907 | 80,148,861 | 4,518,217,220 | 151,629,441 | 56,808,972 | 1,340,967,136 | 44,400,104 | 340,742,864 |
| 1908 | 75,183,210 | 3,816,998,693 | 129,686,834 | 66,127,704 | 929,287,467 | 28,148,450 | 330,812,658 |
| 1909 | 75,183,196 | 4,447,985,202 | 112,224,504 | 53,233,890 | 1,233,750,327 | 22,602,288 | 287,900,946 |
| 1910 | 74,556,603 | 3,206,708.226 | 149,820,088 | 49,108,598 | 640,088,766 | 89,014,880 | 357,196,074 |
| 1911 | 73,754,400 | 4,033,940,915 | 181,963,046 | 83,384,870 | 804,596,955 | 51,030,711 | 355,327,072 |
| 1912 | 62,522,888 | 5,535,125,429 | 171,156,259 | 72,490,021 | 1,293,690,138 | 74,328,074 | 379,845,320 |
| 1913 | 67,456,832 | 4,562,295,675 | 200,149,246 | 76,262,845 | 1,128,092,367 | 117,950,875 | 418,796,906 |
| 1914 | 58,303,564 | 4,760,940,538 | 199,530,874 | 59,030,623 | 799,974,252 | 69,813,711 | 449,749,982 |
| 1915 | 69,980,614 | 4,403,578,499 | 158,462,508 | 44,026,125 | 1,479,065,015 | 43,478,892 | 348,346,091 |

| Year ending June 30— | Hops. | Oils, vegetable—cottonseed oil. | Rice and rice bran, meal, and polish. | Sugar, raw and refined. | Wheat. | Wheat flour. | Wheat and wheat flour (in terms of grain). |
|---|---|---|---|---|---|---|---|
| Average: | *Pounds.* | *Gallons.* | *Pounds.* | *Pounds.* | *Bushels.* | *Barrels.* | *Bushels.* |
| 1852–1856 | 1,162,802 | ........... | 56,514,840 | 7,730,322 | 4,715,021 | 2,891,562 | 19,172,830 |
| 1857–1861 | 2,216,095 | ........... | 65,732,080 | 6,015,058 | 12,378,351 | 3,318,280 | 28,969,749 |
| 1862–1866 | 4,719,330 | ........... | 2,257,860 | 3,007,777 | 22,529,735 | 3,530,757 | 40,183,518 |
| 1867–1871 | 6,486,616 | ........... | 1,856,948 | 4,356,900 | 22,106,833 | 2,585,115 | 35,032,409 |
| 1872–1876 | 3,446,466 | 547,450 | 391 344 | 20,142,169 | 48,957,518 | 3,415,871 | 66,036,873 |
| 1877–1881 | 10,445,654 | 4,498,436 | 602,442 | 41,718,443 | 107,780,556 | 5,375,583 | 133,262,753 |
| 1882–1886 | 9,584,437 | 3,467,905 | 561,406 | 107,129,770 | 82,883,913 | 8,620,199 | 121,674,809 |
| 1887–1891 | 7,184,147 | 7,120,796 | 3,209,653 | 75,073,838 | 64,739,011 | 11,286,568 | 115,528,568 |
| 1892–1896 | 15,146,667 | 15,782,647 | 10,277,947 | 13,999,349 | 99,913,895 | 15,713,279 | 170,623,652 |
| 1897–1901 | 15,467,314 | 42,863,203 | 18,407,139 | 11,213,664 | 120,247,430 | 17,151,070 | 197,427,246 |
| 1902–1906 | 11,476,272 | 38,605,737 | 45,977,670 | 14,807,014 | 70,527,077 | 15,444,100 | 140,025,529 |
| 1907–1911 | 14,774,185 | 38,783,550 | 27,194,549 | 61,429,802 | 62,854,580 | 11,840,699 | 116,137,728 |
| 1901 | 14,963,676 | 49,356,741 | 25,527,846 | 8,874,860 | 132,060,667 | 18,650,979 | 215,990,073 |
| 1902 | 10,715,151 | 33,042,848 | 29,591,274 | 7,572,452 | 154,856,102 | 17,759,203 | 234,772,516 |
| 1903 | 7,794,705 | 35,642,994 | 19,750,448 | 10,520,156 | 114,181,420 | 19,716,484 | 202,905,598 |
| 1904 | 10,985,988 | 29,013,743 | 29,121,763 | 15,418,537 | 44,230,169 | 16,999,432 | 120,727,613 |
| 1905 | 14,858,612 | 51,535,580 | 113,282,760 | 18,348,077 | 4,394,402 | 8,826,335 | 44,112,910 |
| 1906 | 13,026,904 | 43,793,519 | 38,142,103 | 22,175,846 | 34,973,291 | 13,919,048 | 97,609,007 |
| 1907 | 16,809,534 | 41,880,304 | 30,174,371 | 21,237,603 | 76,569,423 | 15,584,667 | 146,700,425 |
| 1908 | 22,920,480 | 41,019,991 | 28,444,415 | 25,510,643 | 100,371,057 | 13,927,247 | 163,043,669 |
| 1909 | 10,446,884 | 51,087,329 | 20,511,429 | 79,946,297 | 66,923,244 | 10,521,161 | 114,268,468 |
| 1910 | 10,589,254 | 29,860,667 | 26,779,188 | 125,507,022 | 46,679,876 | 9,040,987 | 87,364,318 |
| 1911 | 13,104,774 | 30,069,459 | 30,063,341 | 54,947,444 | 23,729,302 | 10,129,435 | 69,311,760 |
| 1912 | 12,190,663 | 53,262,796 | 39,446,571 | 79,594,034 | 30,160,212 | 11,006,487 | 79,689,404 |
| 1913 | 17,591,195 | 42,031,052 | 38,908,057 | 43,994,761 | 91,602,974 | 11,394,805 | 141,132,166 |
| 1914 | 24,262,896 | 25,728,411 | 22,414,326 | 50,895,726 | 92,393,775 | 11,821,461 | 145,590,349 |
| 1915 | 16,210,443 | 42,448,870 | 77,480,065 | 549,007,405 | 259,642,533 | 16,182,765 | 332,464,976 |

TABLE 187.—*Imports of selected agricultural products, 1852–1915.*

[Compiled from reports of Foreign Commerce and Navigation of the United States. Where figures are lacking, either there were no imports or they were not separately classified for publication. "Silk" includes, prior to 1881, only "Silk, raw or as reeled from the cocoon;" in 1881 and 1882 are included this item and "Silk waste;" after 1882, both these items and "Silk cocoons." From "Cocoa and chocolate" are omitted in 1860, 1861, and in 1872 to 1881, small quantities of chocolate, the official returns for which were given only in value. "Jute and jute butts" includes in 1858 and 1859 an unknown quantity of "Sisal grass, coir, etc.," and in 1865–1868 an unknown quantity of "Hemp." Cattle hides are included in "Hides and skins other than cattle and goat" in 1895–1897. Olive oil for table use includes in 1862–1864 and 1885–1905 all olive oil. Sisal grass includes in 1884–1890 "Other vegetable substances." Hemp includes in 1885–1888 all substitutes for hemp.]

| Year ending June 30– | Cheese. | Silk. | Wool. | Almonds. | Argols or wine lees. | Cocoa and chocolate, total. | Coffee. |
|---|---|---|---|---|---|---|---|
| Average: | *Pounds.* | *Pounds.* | *Pounds.* | *Pounds.* | *Pounds.* | *Pounds.* | *Pounds.* |
| 1852–1856 | 1,053,983 | ... | 19,067,447 | 3,460,807 | ... | 2,486,572 | 196,582,803 |
| 1857–1861 | 1,378,147 | ... | ... | 3,251,091 | ... | 3,063,803 | 216,235,090 |
| 1862–1866 | ... | ... |  | 2,482,063 | 1,354,947 | 2,453,141 | 124,551,992 |
| 1867–1871 | ... | 681,669 | ... | ... | 2,360,529 | 3,502,614 | 248,726,019 |
| 1872–1876 | ... | 1,094,948 | ... | ... | 4,951,473 | 4,857,364 | 307,006,928 |
| 1877–1881 | ... | 1,922,269 | 62,744,282 | ... | 12,403,256 | 6,315,488 | 384,282,199 |
| 1882–1886 | ... | 4,672,846 | 83,293,800 | ... | 17,551,967 | 11,568,173 | 529,578,782 |
| 1887–1891 | 8,335,323 | 6,564,121 | 117,763,889 | 5,860,728 | 21,433,570 | 18,322,049 | 509,367,994 |
| 1892–1896 | 9,649,752 | 8,382,892 | 162,640,491 | 7,487,676 | 26,469,990 | 25,475,234 | 597,484,217 |
| 1897–1901 | 12,588,515 | 10,962,210 | 163,979,079 | 7,361,198 | 24,379,847 | 38,209,423 | 816,570,082 |
| 1902–1906 | 22,165,754 | 17,187,544 | 193,656,402 | 10,920,881 | 27,647,440 | 70,901,254 | 980,119,167 |
| 1907–1911 | 37,662,812 | 22,143,461 | 199,562,649 | 15,297,414 | 29,350,692 | 113,673,368 | 934,533,322 |
| 1901 | 15,329,099 | 10.405,555 | 103,583,505 | 5,140,232 | 28,598,781 | 47,620,204 | 854,871,310 |
| 1902 | 17,067,714 | 14,234,826 | 166,576,966 | 9,868,982 | 29,276,148 | 52,878,587 | 1,091,004,252 |
| 1903 | 20,671,384 | 15,270,859 | 177,137,796 | 8,142,164 | 29,966,557 | 65,046,884 | 915,086,380 |
| 1904 | 22,707,103 | 16,722,709 | 173,742,834 | 9,838,852 | 24,571,730 | 75,070,746 | 995,043,284 |
| 1905 | 23,095,705 | 22,357,307 | 249,135,746 | 11,745,081 | 26,281,931 | 77,383,024 | 1,047,792,984 |
| 1906 | 27,286,866 | 17,352,021 | 201,688,668 | 15,009,326 | 28,140,835 | 84,127,027 | 851,668,933 |
| 1907 | 33,848,766 | 18,743,904 | 203,847,545 | 14,233,613 | 30,540,893 | 97,059,513 | 985,321,473 |
| 1908 | 32,530,830 | 16,662,132 | 125,980,524 | 17,144,968 | 26,738,834 | 86,604,684 | 890,640,057 |
| 1909 | 35,548,143 | 25,187,957 | 266,409,304 | 11,029,421 | 32,115,646 | 132,660,931 | 1,049,868,768 |
| 1910 | 40,817,524 | 23,457,223 | 263,928,232 | 18,556,356 | 28,182,956 | 111,070,834 | 871,469,516 |
| 1911 | 45,568,797 | 26,666,091 | 137,647,641 | 15,522,712 | 29,175,133 | 140,970,877 | 875,366,797 |
| 1912 | 46,542,007 | 26,584,962 | 193,400,713 | 17,231,458 | 23,661,078 | 148,785,846 | 885,201,247 |
| 1913 | 49,387,944 | 32,101,555 | 195,293,255 | 15,670,558 | 29,479,119 | 143,509,852 | 863,130,757 |
| 1914 | 63,784,313 | 34,545,829 | 247,648,869 | 19,038,405 | 29,793,011 | 179,364,091 | 1,001,528,317 |
| 1915 | 50,138,520 | 31,052,674 | 308,083,429 | 17,111,264 | 28,624,554 | 194,734,195 | 1,118,690,524 |

| Year ending June 30— | Flax. | Hemp. | Hops. | Jute and jute butts. | Licorice root. | Manila. | Molasses. |
|---|---|---|---|---|---|---|---|
| Average: | *Long tons.* | *Long tons.* | *Pounds.* | *Long tons.* | *Pounds.* | *Long tons.* | *Gallons.* |
| 1852–1856 | 1,143 | 1,574 | ... | 3,244 | ... | 12,084 | 28,488,888 |
| 1857–1861 | ... | 2,652 | ... | 17,239 | 1,372,573 | ... | 30,190,875 |
| 1862–1866 | ... | ... | ... | 3,213 | 1,887,892 | 15,566 | 34,262,933 |
| 1867–1871 | ... | ... | ... | 14,909 | ... | ... | 53,322,088 |
| 1872–1876 | 4,170 | 22,711 | ... | 49,188 | ... | ... | 44,815,321 |
| 1877–1881 | 4,260 | 22,458 | ... | 62,496 | ... | ... | 32,638,963 |
| 1882–1886 | 5,678 | 30,557 | 1,618,879 | 91,058 | ... | ... | 35,019,689 |
| 1887–1891 | 7,021 | 36,919 | 7,771,672 | 104,887 | 59,275,373 | ... | 30,543,209 |
| 1892–1896 | 6,785 | 5,409 | 2,386,240 | 84,111 | 86,444,974 | 47,354 | 15,474,619 |
| 1897–1901 | 7,008 | 4,107 | 2,381,899 | 93,970 | 87,475,620 | 47,217 | 6,321,160 |
| 1902–1906 | 8,574 | 5,230 | 5,205,867 | 101,512 | 99,543,395 | 60,813 | 17,191,821 |
| 1907–1911 | 9,721 | 6,368 | 6,769,965 | 100,420 | 96,111,469 | 67,289 | 24,147,348 |
| 1901 | 6,878 | 4,057 | 2,606,708 | 103,140 | 100,105,654 | 43,735 | 11,453,156 |
| 1902 | 7,772 | 6,054 | 2,805,293 | 128,963 | 109,077,323 | 56,453 | 14,391,215 |
| 1903 | 8,155 | 4,919 | 6,012,510 | 79,703 | 88,580,611 | 61,648 | 17,240,399 |
| 1904 | 10,123 | 5,871 | 2,758,163 | 96,735 | 89,463,182 | 65,666 | 18,828,530 |
| 1905 | 8,089 | 3,987 | 4,339,379 | 98,215 | 108,443,892 | 61,562 | 19,477,885 |
| 1906 | 8,729 | 5,317 | 10,113,989 | 103,945 | 102,151,969 | 58,738 | 16,021,076 |
| 1907 | 8,656 | 8,718 | 6,211,893 | 104,489 | 66,115,863 | 54,513 | 24,630,935 |
| 1908 | 9,528 | 6,213 | 8,493,265 | 107,533 | 109,355,720 | 52,467 | 18,882,756 |
| 1909 | 9,870 | 5,208 | 7,386,574 | 156,685 | 97,742,776 | 61,902 | 22,092,696 |
| 1910 | 12,761 | 6,423 | 3,200,560 | 68,155 | 82,207,496 | 93,253 | 31,292,165 |
| 1911 | 7,792 | 5,278 | 8,557,531 | 65,238 | 125,135,490 | 74,308 | 23,838,190 |
| 1912 | 10,900 | 5,007 | 2,991,125 | 101,001 | 74,582,225 | 68,536 | 28,828,213 |
| 1913 | 12,421 | 7,663 | 8,494,144 | 125,389 | 105,116,227 | 73,823 | 38,926,521 |
| 1914 | 9,885 | 8,822 | 5,382,025 | 106,033 | 115,636,131 | 49,688 | 51,410,271 |
| 1915 | 4,694 | 5,310 | 11,651,332 | 83,140 | 65,95[illegible],501 | 51,081 | 70,839,628 |

TABLE 187.—*Imports of selected agricultural products, 1852–1915*—Continued.

| Year ending June 30— | Olive oil, for table use. | Opium, crude. | Potatoes. | Rice, and rice flour, rice meal, and broken rice. | Sisal grass. | Sugar, raw and refined. | Tea. |
|---|---|---|---|---|---|---|---|
| Average: | *Gallons.* | *Pounds.* | *Bushels.* | *Pounds.* | *Long tons.* | *Pounds.* | *Pounds.* |
| 1852–1856 | .......... | 110,143 | 406,611 | .......... | .......... | 479,373,648 | 24,959,922 |
| 1857–1861 | .......... | 113,594 | .......... | .......... | .......... | 691,323,833 | 28,149,643 |
| 1862–1866 | 177,947 | 128,590 | 251,637 | 70,893,331 | 615 | 672,637,141 | 30,869,450 |
| 1867–1871 | 152,827 | 209,096 | 216,077 | 52,953,577 | .......... | 1,138,464,815 | 44,052,805 |
| 1872–1876 | 174,555 | 365,071 | 254,615 | 72,536,435 | .......... | 1,614,055,119 | 62,436,359 |
| 1877–1881 | 218,507 | 407,656 | 1,850,106 | 62,614,706 | .......... | 1,760,508,290 | 67,583,083 |
| 1882–1886 | .......... | 391,946 | 2,834,736 | 99,870,675 | .......... | 2,458,490,409 | 74,781,418 |
| 1887–1891 | 758,352 | 475,299 | 3,878,580 | 156,868,635 | 40,274 | 3,003,283,854 | 84,275,049 |
| 1892–1896 | 773,692 | 528,785 | 1,804,649 | 160,807,652 | 50,129 | 3,827,799,481 | 92,782,175 |
| 1897–1901 | 909,249 | 567,681 | 495,150 | 165,231,669 | 70,297 | 3,916,433,945 | 86,809,270 |
| 1902–1906 | 1,783,425 | 537,576 | 2,662,121 | 150,913,684 | 96,832 | 3,721,782,404 | 98,677,584 |
| 1907–1911 | 3,897,224 | 489,513 | 1,907,405 | 215,892,467 | 102,440 | 3,997,156,461 | 96,742,977 |
| 1901 | 983,059 | 583,208 | 371,911 | 117,199,710 | 70,076 | 3,975,005,840 | 89,806,453 |
| 1902 | 1,339,097 | 534,189 | 7,656,162 | 157,658,894 | 89,583 | 3,031,915,875 | 75,579,125 |
| 1903 | 1,494,132 | 516,570 | 358,505 | 169,656,284 | 87,025 | 4,216,108,106 | 108,574,905 |
| 1904 | 1,713,500 | 573,055 | 3,166,581 | 154,221,772 | 109,214 | 3,700,623,613 | 112,905,541 |
| 1905 | 1,923,174 | 594,680 | 181,199 | 106,483,515 | 100,301 | 3,680,932,998 | 102,706,599 |
| 1906 | 2,447,131 | 469,387 | 1,948,160 | 166,547,957 | 98,037 | 3,979,331,430 | 93,621,750 |
| 1907 | 3,449,517 | 565,252 | 176,917 | 209,603,180 | 99,061 | 4,391,839,975 | 86,368,490 |
| 1908 | 3,799,112 | 285,845 | 403,952 | 212,783,392 | 103,994 | 3,371,997,112 | 94,149,564 |
| 1909 | 4,129,454 | 517,388 | 8,383,966 | 222,900,422 | 91,451 | 4,189,421,018 | 114,916,520 |
| 1910 | 3,702,210 | 449,239 | 353,208 | 225,400,545 | 99,966 | 4,094,545,936 | 85,626,370 |
| 1911 | 4,405,827 | 629,842 | 218,984 | 208,774,795 | 117,727 | 3,937,978,265 | 102,563,942 |
| 1912 | 4,836,515 | 399,837 | 13,734,695 | 190,063,331 | 114,467 | 4,104,618,393 | 101,406,816 |
| 1913 | 5,221,001 | 508,433 | 327,230 | 222,103,547 | 153,869 | 4,740,041,488 | 94,812,800 |
| 1914 | 6,217,560 | 455,200 | 3,645,993 | 300,194,917 | 215,547 | 5,066,821,873 | 91,130,815 |
| 1915 | 6,710,967 | 484,027 | 270,942 | 277,191,472 | 185,764 | 5,420,981,867 | 96,987,942 |

| Year ending June 30— | Beeswax. | Onions. | Plums and prunes. | Raisins. | Currants. | Dates. | Figs. |
|---|---|---|---|---|---|---|---|
| Average: | *Pounds.* | *Bushels.* | *Pounds.* | *Pounds.* | *Pounds.* | *Pounds.* | *Pounds.* |
| 1887–1891 | 128,790 | .......... | 60,237,642 | 38,545,635 | .......... | .......... | 9,783,650 |
| 1892–1896 | 279,839 | .......... | 12,405,549 | 17,745,925 | 34,397,754 | 14,914,349 | 10,117,049 |
| 1897–1901 | 265,143 | 628,358 | 560,762 | 7,669,593 | 27,520,440 | 15,653,642 | 8,919,921 |
| 1902–1906 | 456,727 | 924,418 | 563,900 | 7,344,676 | 35,457,213 | 25,649,432 | 14,334,760 |
| 1907–1911 | 845,720 | 1,103,034 | .......... | 5,283,145 | 35,258,628 | 26,059,353 | 19,848,037 |
| 1901 | 213,773 | 774,042 | 745,974 | 3,860,836 | 16,049,198 | 20,013,681 | 9,933,871 |
| 1902 | 408,706 | 796,316 | 522,478 | 6,683,545 | 36.238,976 | 21,681,159 | 11,087,131 |
| 1903 | 488,576 | 925,599 | 633,819 | 6,715,675 | 33,878,209 | 43,814,917 | 16,482,142 |
| 1904 | 425,168 | 1,171,242 | 494,105 | 6,867,617 | 38,347,649 | 21,058,164 | 13,178,061 |
| 1905 | 373,569 | 856,366 | 671,604 | 4,041,689 | 31,742,919 | 19,257,250 | 13,364,107 |
| 1906 | 587,617 | 872,566 | 497,494 | 12,414,855 | 37,078,311 | 22,435,672 | 17,562,358 |
| 1907 | 917,088 | 1,126,114 | 323,377 | 8,967,151 | 38,392,779 | 31,270,899 | 24,346,173 |
| 1908 | 671,526 | 1,275,333 | 335,089 | 9,132,353 | 38,652,656 | 24,958,343 | 18,836,574 |
| 1909 | 764,937 | 574,530 | 296,123 | 5,794,320 | 32,482,111 | 21,869,218 | 15,235,513 |
| 1910 | 972,145 | 1,024,226 | .......... | 5,042,683 | 33,326,030 | 22,693,713 | 17,362,197 |
| 1911 | 902,904 | 1,514,967 | .......... | 2,479,220 | 33,439,565 | 29,504,592 | 23,459,728 |
| 1912 | 1,076,741 | 1,436,037 | .......... | 3,255,861 | 33,151,396 | 25,208,248 | 18,765,408 |
| 1913 | 828,793 | 789,458 | .......... | 2,579,705 | 30,843,735 | 34,304,951 | 16,837,819 |
| 1914 | 1,412,200 | 1,114,811 | .......... | 4,554,549 | 32,033,177 | 34,073,608 | 19,284,868 |
| 1915 | .......... | 829,177 | .......... | 2,808,806 | 30,350,527 | 24,949,374 | 20,779,780 |

TABLE 187.—*Imports of selected agricultural products, 1852-1915*—Continued.

| Year ending June 30— | Hides and skins, other than furs. | | | Macaroni, vermicelli, and all similar preparations. | Lemons. | Oranges. | Walnuts. |
|---|---|---|---|---|---|---|---|
| | Cattle. | Goat. | Other than cattle and goat. | | | | |
| Average | *Pounds.* | *Pounds.* | *Pounds.* | *Pounds.* | *Pounds.* | *Pounds.* | *Pounds.* |
| 1897-1901 | ............ | 68,052,973 | 91,173,311 | ............ | ............ | ............ | ............ |
| 1902-1906 | 126,995,011 | 93,674,819 | 115,952,418 | ............ | 153,160,863 | 41,104,544 | ............ |
| 1907-1911 | 178,681,537 | 94,329,840 | 143,351,321 | 99,724,072 | 153,343,434 | 12,089,790 | 30,980,661 |
| 1901 | 129,174,624 | 73,745,596 | 77,989,617 | ............ | 148,514,614 | 50,332,914 | ............ |
| 1902 | 148,627,907 | 88,038,516 | 89,457,680 | ............ | 164,075,809 | 52,742,476 | ............ |
| 1903 | 131,644,325 | 85,114,070 | 102,340,303 | 28,787,821 | 152,004,213 | 56,872,070 | 12,362,567 |
| 1904 | 85,370,168 | 86,338,547 | 103,024,752 | 40,224,202 | 171,923,221 | 35,893,260 | 23,670,761 |
| 1905 | 113,177,857 | 97,803,571 | 126,893,934 | 53,441,080 | 139,084,321 | 28,880,575 | 21,684,104 |
| 1906 | 156,155,300 | 111,079,391 | 158,045,419 | 77,926,029 | 138,717,252 | 31,134,341 | 24,917,028 |
| 1907 | 134,671,020 | 101,201,596 | 135,111,199 | 87,720,730 | 157,859,906 | 21,267,346 | 32,597,592 |
| 1908 | 98,353,249 | 63,640,758 | 120,770,918 | 97,233,708 | 178,490,003 | 18,397,429 | 28,887,110 |
| 1909 | 192,252,083 | 104,048,244 | 148,253,908 | 85,114,003 | 135,183,550 | 8,435,873 | 26,157,703 |
| 1910 | 318,003,538 | 115,844,758 | 174,770,732 | 113,772,801 | 160,214,785 | 4,676,118 | 83,641,466 |
| 1911 | 150,127,796 | 86,913,842 | 137,849,757 | 114,779,116 | 134,968,924 | 7,672,186 | 33,619,434 |
| 1912 | 251,012,513 | 95,340,703 | 191,414,882 | 108,231,028 | 145,639,396 | 7,628,662 | 37,213,674 |
| 1913 | 268,042,300 | 96,250,305 | 207,903,995 | 106,500,752 | 151,416,412 | 12,252,960 | 26,662,441 |
| 1914 | 279,963,488 | 84,759,428 | 196,347,770 | 126,128,621 | ............ | ............ | 37,195,728 |
| 1915 | 334,341,417 | 66,547,163 | 137,429,153 | 56,542,480 | ............ | ............ | 33,445,838 |

TABLE 188.—*Foreign trade of the United States in forest products, 1852–1915.*

[Compiled from reports of Foreign Commerce and Navigation of the United States. All values are gold.]

| Year ending June 30— | Exports. | | Imports. | Excess of exports (+) or of imports (−). |
|---|---|---|---|---|
| | Domestic. | Foreign. | | |
| Average: | | | | |
| 1852-1856 | $6,819,079 | $694,037 | $3,256,302 | +$4,256,814 |
| 1857-1861 | 9,994,808 | 962,142 | 6,942,211 | + 4,014,739 |
| 1862-1866 | 7,366,103 | 798,076 | 8,511,370 | − 347,191 |
| 1867-1871 | 11,775,297 | 690,748 | 14,812,576 | − 2,346,531 |
| 1872-1876 | 17,906,771 | 959,862 | 19,728,458 | − 861,825 |
| 1877-1881 | 17,579,313 | 552,514 | 22,006,227 | − 3,574,400 |
| 1882-1886 | 24,704,992 | 1,417,226 | 34,252,753 | − 8,130,535 |
| 1887-1891 | 26,060,729 | 1,442,760 | 39,047,287 | −12,143,798 |
| 1892-1896 | 29,276,428 | 1,707,307 | 45,091,081 | −14,107,346 |
| 1897-1901 | 45,960,863 | 3,283,274 | 52,326,879 | − 3,082,742 |
| 1902-1906 | 63,584,670 | 3,850,221 | 79,885,457 | −12,450,566 |
| 1907-1911 | 88,764,471 | 6,488,455 | 137,051,471 | −41,798,545 |
| 1901 | 55,369,161 | 3,599,192 | 57,143,650 | + 1,824,703 |
| 1902 | 48,928,764 | 3,609,071 | 59,187,049 | − 6,649,214 |
| 1903 | 58,734,016 | 2,865,325 | 71,478,022 | − 9,878,681 |
| 1904 | 70,085,789 | 4,177,352 | 79,619,296 | − 5,356,155 |
| 1905 | 63,199,348 | 3,790,097 | 92,680,555 | −25,691,110 |
| 1906 | 76,975,431 | 4,809,261 | 96,462,364 | −14,677,672 |
| 1907 | 92,948,705 | 5,500,331 | 122,420,776 | −23,971,740 |
| 1908 | 90,362,073 | 4,570,397 | 97,733,092 | − 2,800,622 |
| 1909 | 72,442,454 | 4,982,810 | 123,920,126 | −46,494,862 |
| 1910 | 85,030,230 | 9,801,881 | 178,871,797 | −84,039,686 |
| 1911 | 103,038,892 | 7,586,854 | 162,311,565 | −51,685,819 |
| 1912 | 108,122,254 | 6,413,343 | 172,523,465 | −57,987,868 |
| 1913 | 124,835,784 | 7,431,851 | 180,502,444 | −48,234,809 |
| 1914 | 106,978,554 | 4,517,766 | 155,261,300 | −43,764,980 |
| 1915 | ............ | ............ | ............ | ............ |

## TABLE 189.—*Exports of selected domestic forest products, 1852–1915.*

**[Compiled from reports of Foreign Commerce and Navigation of the United States. Where figures are lacking, either there were no exports or they were not separately classified for publication.]**

| Year ending June 30— | Lumber. | | | Rosin. | Spirits of turpentine. | Timber. | |
|---|---|---|---|---|---|---|---|
| | Boards, deals, and planks.[1] | Shooks, other than box. | Staves. | | | Hewn. | Sawed. |
| Average: | *M feet.* | *Number.* | *Number.* | *Barrels.* | *Gallons.* | *Cubic feet.* | *M feet.* |
| 1852–1856 | 129,499 | ........ | ........ | 552,210 | 1,369,250 | ........ | ........ |
| 1857–1861 | 205,476 | ........ | ........ | 664,206 | 2,735,104 | ........ | ........ |
| 1862–1866 | 138,020 | ........ | ........ | 69,314 | 107,162 | ........ | ........ |
| 1867–1871 | 138,720 | ........ | ........ | 491,774 | 2,693,412 | ........ | ........ |
| 1872–1876 | 221,658 | ........ | ........ | 845,803 | ........ | 17,459,632 | ........ |
| 1877–1881 | 303,114 | ........ | ........ | ........ | 7,138,556 | 18,316,876 | ........ |
| 1882–1886 | 433,963 | ........ | ........ | 1,289,869 | 9,301,894 | 13,701,663 | ........ |
| 1887–1891 | 531,755 | 593,054 | ........ | 1,533,834 | 10,794,025 | 6,401,543 | 218,796 |
| 1891–1896 | 616,090 | 435,581 | ........ | 2,006,427 | 14,258,928 | 6,062,418 | 263,641 |
| 1897–1901 | 957,218 | 668,797 | ........ | 2,477,696 | 18,349,386 | 5,146,927 | 428,755 |
| 1902–1906 | 212,476 | 765,215 | 51,234,056 | 2,453,280 | 16,927,090 | 3,968,469 | 508,212 |
| 1907–1911 | 1,649,203 | 925,828 | 56,181,900 | 2,355,560 | 16,658,955 | 3,406,245 | 479,776 |
| 1901 | 1,101,815 | 714,651 | 47,363,262 | 2,820,815 | 20,240,851 | 4,624,698 | 533,920 |
| 1902 | 942,814 | 788,241 | 46,998,512 | 2,535,962 | 19,177,788 | 5,388,439 | 412,750 |
| 1903 | 1,065,771 | 566,205 | 55,879,010 | 2,396,498 | 16,378,787 | 3,291,498 | 530,659 |
| 1904 | 1,426,784 | 533,182 | 47,420,095 | 2,585,108 | 17,202,808 | 3,788,740 | 558,690 |
| 1905 | 1,283,406 | 872,192 | 48,286;285 | 2,310,275 | 15,894,813 | 3,856,623 | 486,411 |
| 1906 | 1,343,607 | 1,066,253 | 57,586,378 | 2,438,556 | 15,981,253 | 3,517,046 | 552,548 |
| 1907 | 1,623,964 | 803,346 | 51,120,171 | 2,560,966 | 15,851,676 | 3,278,110 | 600,865 |
| 1908 | 1,548,130 | 900,812 | 61,696,949 | 2,712,732 | 19,532,583 | 4,883,506 | 463,440 |
| 1909 | 1 357,822 | 977,376 | 52,583,016 | 2,170,177 | 17,502,028 | 2,950,528 | 383,309 |
| 1910 | 1,681,489 | 928,197 | 49,783,771 | 2,144,318 | 15,587,737 | 3,245,196 | 451,721 |
| 1911 | 2,031,608 | 1,019,411 | 65,725,595 | 2,189,607 | 14,817,751 | 2,673,887 | 499,547 |
| | | | | | | *M feet.* | |
| 1912 | 2,306,680 | 1,161,591 | 64,162,599 | 2,474,460 | 19,599,241 | 31,067 | 406,954 |
| 1913 | 2,550,308 | 1,710,095 | 89,005,624 | 2,806,046 | 21,039,597 | 34,502 | 477,135 |
| 1914 | 2,405,296 | 867,805 | 77,150,535 | 2,417,950 | 18,900,701 | 29,859 | 411,307 |
| 1915 | 1,129,205 | 620,043 | 39,297,268 | 1,372,316 | 9,464,120 | 6,118 | 167,671 |

[1] Including "Joists and scantling" prior to 1884.

## TABLE 190.—*Imports of selected forest products, 1852–1915.*

| Year ending June 30— | Camphor, crude. | India rubber. | Rubber gums, total. | Lumber. | | Shellac. | Wood pulp. |
|---|---|---|---|---|---|---|---|
| | | | | Boards, deals, planks, and other sawed. | Shingles. | | |
| Average: | *Pounds.* | *Pounds.* | *Pounds.* | *M fert.* | *M.* | *Pounds.* | *Long tons.* |
| 1852–1856 | 213,720 | ........ | ........ | ........ | ........ | ........ | ........ |
| 1857–1861 | 360,522 | ........ | ........ | ........ | ........ | ........ | ........ |
| 1862–1866 | 386,731 | ........ | ........ | ........ | ........ | 634,276 | ........ |
| 1867–1871 | ........ | ........ | [1] 7,389,890 | ........ | ........ | ........ | ........ |
| 1872–1876 | ........ | ........ | 12,631,388 | 564,642 | 88,197 | ........ | ........ |
| 1877–1881 | 1,515,614 | ........ | 15,610,634 | 417,907 | 55,394 | ........ | ........ |
| 1882–1886 | 1,958,608 | ........ | 24,480,997 | 577,728 | 87,760 | ........ | ........ |
| 1887–1891 | 2,273,883 | ........ | 33,226,520 | 646,745 | 184,050 | 5,086,421 | 37,251 |
| 1892–1896 | 1,491,902 | 38,359,547 | 39,671,553 | 661,495 | ........ | 5,848,339 | 42,771 |
| 1897–1901 | 1,858,018 | 47,469,136 | 52,974,744 | 566,304 | ........ | 8,839,232 | 46,827 |
| 1902–1906 | 2,139,183 | 57,903,641 | 75,908,633 | 727,205 | 772,340 | 11,613,967 | 130,764 |
| 1907–1911 | 2,939,167 | 80,129,567 | 121,504,098 | 899,659 | 866,565 | 19,046,030 | 319,007 |
| 1901 | 2,175,784 | 55,275,529 | 64,927,176 | 490,820 | 555,853 | 9,608,745 | 48,757 |
| 1902 | 1,831,058 | 50,413,481 | 67,790,069 | 665,603 | 707,614 | 9,064,789 | 67,416 |
| 1903 | 2,472,440 | 55,010,571 | 69,311,678 | 720,937 | 724,131 | 11,590,725 | 116,881 |
| 1904 | 2,819,673 | 59,015,551 | 74,327,584 | 589,232 | 770,373 | 10,933,413 | 144,796 |
| 1905 | 1,904,002 | 67,234,256 | 87.004,384 | 710,538 | 758,725 | 10,700,817 | 167,504 |

[1] Includes "Gutta-percha" only, for 1867.

**TABLE 190.**—*Imports of selected forest products, 1852–1915*—Continued.

| Year ending June 30— | Camphor, crude. | India rubber. | Rubber gums, total. | Lumber. |  | Shellac. | Wood pulp. |
|---|---|---|---|---|---|---|---|
|  |  |  |  | Boards, deals, planks, and other sawed. | Shingles. |  |  |
|  | *Pounds.* | *Pounds.* | *Pounds.* | *M feet.* | *M.* | *Pounds.* | *Long tons.* |
| 1906 | 1,668,744 | [1]57,844,345 | 81,109,451 | 949,717 | 900,856 | 15,780,090 | 157,224 |
| 1907 | 3,138,070 | [1]76,963,838 | 106,747,589 | 934,195 | 881,003 | 17,785,960 | 213,110 |
| 1908 | 2,814,299 | [1]62,233,160 | 85,809,625 | 791,288 | 988,081 | 13,361,932 | 237,514 |
| 1909 | 1,990,499 | [1]88,359,895 | 114,598,768 | 846,024 | 1,058,363 | 19,185,137 | 274,217 |
| 1910 | 3,026,648 | [1]101,044,681 | 154,620,629 | 1,054,416 | 762,798 | 29,402,182 | 378,322 |
| 1911 | 3,726,319 | 72,046,260 | 145,743,880 | 872,374 | 642,582 | 15,494,940 | 491,873 |
| 1912 | 2,154,646 | 110,210,173 | 175,965,538 | 905,275 | 514,657 | 18,745,771 | 477,508 |
| 1913 | 3,709,264 | 113,384,359 | 170,747,339 | 1,090,628 | 560,297 | 21,912,015 | 502,913 |
| 1914 | 3,476,908 | 131,995,742 | 161,777,250 | 928,873 | 895,038 | 16,719,756 | 508,360 |
| 1915 | 3,729,207 | 172,068,428 | 196,121,979 | 939,322 | 1,487,116 | 24,153,363 | 587,922 |

[1] Includes "Guayule gum," crude.

**TABLE 191.**—*Principal farm products imported from specified countries into the United States, 1913–1915.*

| Country from which consigned, and article. | Year ending June 30— |  |  |  |  |  |
|---|---|---|---|---|---|---|
|  | 1913 |  | 1914 |  | 1915 |  |
|  | Quantity. | Value. | Quantity. | Value. | Quantity. | Value. |
| Brazil: |  |  |  |  |  |  |
| Cocoa (crude)...pounds.. | 14,354,460 | $1,642,714 | 25,870,186 | $2,764,766 | 19,708,616 | $2,017,224 |
| Coffee.............do.... | 639,262,011 | 87,867,451 | 743,113,500 | 76,016,463 | 773,400,315 | 65,492,280 |
| British West Indies: |  |  |  |  |  |  |
| Bananas.......bunches.. | 11,164,894 | 3,488,964 | 15,677,191 | 4,849,037 | 11,957,935 | 3,483,373 |
| Cocoa...........pounds.. | 29,588,055 | 4,040,691 | 44,062,426 | 5,372,327 | 40,728,851 | 5,407,262 |
| Canada: Tea.........do.... | 3,024,508 | 874,544 | 3,112,383 | 864,814 | 3,446,615 | 981,933 |
| China: Tea..........do.... | 23,728,418 | 3,247,761 | 20,139,342 | 2,755,512 | 23,100,548 | 3,149,308 |
| Colombia: Coffee....do.... | 89,684,514 | 11,728,459 | 91,830,513 | 11,556,038 | 111,077,449 | 13,710,164 |
| Cuba: |  |  |  |  |  |  |
| Bananas.......bunches.. | 2,213,733 | 834,206 | 2,354,395 | 853,536 | 2,708,624 | 929,761 |
| Sugar (raw).....pounds.. | 4,311,744,043 | 93,703,674 | 4,926,606,243 | 98,394,782 | 4,784,888,157 | 156,181,349 |
| Dominican Republic: |  |  |  |  |  |  |
| Cocoa, pounds ........... | 27,241,763 | 3,068,655 | 26,782,966 | 3,187,006 | 46,620,464 | 5,499,510 |
| Ecuador: Cocoa......do.... | 15,229,159 | 1,606,253 | 26,319,735 | 2,693,674 | 33,418,752 | 3,351,797 |
| France: |  |  |  |  |  |  |
| Cheese.............do.... | 3,982,513 | 785,965 | 5,418,904 | 1,032,817 | 3,554,297 | 737,212 |
| Olive oil (salad).gallons.. | 932,536 | 1,465,635 | 949,858 | 1,512,324 | 802,092 | 1,215,594 |
| Italy: |  |  |  |  |  |  |
| Cheese..........pounds.. | 21,326,445 | 4,217,674 | 26,453,626 | 5,024,270 | 25,662,434 | 5,108,890 |
| Macaroni..........do.... | 102,050,089 | 4,692,468 | 121,924,372 | 5,481,187 | 54,591,991 | 2,944,398 |
| Olive oil(salad)..gallons.. | 3,584,945 | 4,619,156 | 4,319,567 | 5,552,098 | 4,864,388 | 6,089,646 |
| Japan: Tea.......pounds.. | 44,381,278 | 7,793,197 | 41,913,273 | 7,171,202 | 43,869,012 | 7,683,356 |
| Mexico: Coffee.......do.... | 26,121,439 | 4,090,909 | 49,385,504 | 8,028,186 | 52,706,120 | 6,898,161 |
| Netherlands: |  |  |  |  |  |  |
| Cheese.............do.... | 3,420,790 | 439,079 | 3,656,763 | 455,159 | 2,210,861 | 287,620 |
| Coffee.............do.... | 1,956,676 | 350,093 | 5,905,654 | 936,763 | 1,583,672 | 253,731 |
| Philippine Islands: Sugar, pounds................... | 203,160,972 | 4,593,199 | 116,749,211 | 2,553,601 | 326,842,296 | 7,511,126 |
| Portugal: Cocoa...pounds.. | 23,040,617 | 2,962,644 | 17,738,638 | 2,292,959 | 3,516,655 | 512,270 |
| Switzerland: Cheese, pounds................... | 17,371,616 | 3,183,350 | 22,489,706 | 3,617,651 | 14,766,682 | 2,677,249 |
| United Kingdom: |  |  |  |  |  |  |
| Cocoa...........pounds.. | 11,660,464 | 1,538,225 | 12,903,640 | 1,633,424 | 21,062,767 | 2,578,996 |
| Tea................do.... | 12,238,114 | 3,619,098 | 14,077,601 | 3,858,970 | 12,869,968 | 3,386,476 |

**TABLE 192.**—*Principal farm products exported to specified countries from the United States, 1913–1915.*

| Country to which consigned, and article. | Year ending June 30— | | | | | |
|---|---|---|---|---|---|---|
| | 1913 | | 1914 | | 1915 | |
| | Quantity. | Value. | Quantity. | Value. | Quantity. | Value. |
| **Belgium:** | | | | | | |
| Corn..............bushels.. | 1,648,089 | $967,838 | 60,227 | $38,198 | 103,927 | $82,324 |
| Wheat..............do.... | 10,601,248 | 10,402,577 | 12,873,372 | 12,479,315 | 5,320,685 | 6,392,090 |
| Bacon............pounds.. | 9,140,688 | 1,280,658 | 5,110,170 | 743,371 | 5,737,181 | 603,344 |
| Hams and shoulders..do.... | 5,821,638 | 792,214 | 4,080,669 | 563,140 | 6,596,068 | 801,837 |
| Lard..............do.... | 18,761,624 | 2,074,640 | 15,915,380 | 1,833,325 | 5,128,630 | 528,764 |
| **Brazil:** Wheat flour..barrels.. | 583,418 | 3,105,239 | 748,612 | 3,752,105 | 707,705 | 3,972,690 |
| **Canada:** | | | | | | |
| Corn..............bushels.. | 8,097,882 | 4,766,805 | 4,641,737 | 3,328,785 | 8,283,156 | 6,154,904 |
| Wheat..............do.... | 851,139 | 829,447 | 4,113,701 | 3,821,159 | 19,848,674 | 20,180,588 |
| Wheat flour........barrels.. | 98,665 | 450,104 | 122,752 | 539,942 | 110,927 | 591,929 |
| Bacon............pounds.. | 6,868,480 | 14007,014 | 11,082,930 | 1,644,388 | 10,025,242 | 1,363,621 |
| Hams and shoulders..do.... | 6,785,477 | 1,046,349 | 4,006,649 | 672,855 | 1,514,602 | 219,257 |
| Lard..............do.... | 11,079,696 | 1,251,425 | 15,995,669 | 1,847,515 | 7,721,616 | 887,910 |
| Pork, pickled.........do.... | 9,436.506 | 943,799 | 12,825,741 | 1,373,501 | 8,500,049 | 870,937 |
| **China:** Wheat flour..barrels.. | 127,814 | 493,364 | 136,374 | 540,154 | 13,273 | 57,066 |
| **Cuba:** | | | | | | |
| Corn..............bushels.. | 2,372,678 | 1,696,821 | 2,410,156 | 1,878,664 | 2,267,305 | 1,896,907 |
| Wheat flour........barrels.. | 907,786 | 4,311,027 | 892,705 | 4,057,806 | 924,989 | 5,379,266 |
| Bacon............pounds.. | 6,658,202 | 804,616 | 13,733,773 | 1,034,755 | 13,360,139 | 1,616,045 |
| Hams and shoulders..do.... | 6,002,471 | 936,058 | 5,637,829 | 940,720 | 6,842,425 | 1,127,283 |
| Lard..............do.... | 46,526,427 | 5,181,445 | 49,609,751 | 5,582,074 | 45,349,283 | 5,011,657 |
| Pork, pickled.........do.... | 9,141,098 | 943,303 | 4,090,780 | 447,374 | 3,874,892 | 428,050 |
| **Denmark:** Corn.....bushels.. | 5,389,897 | 3,021,673 | 118 | 95 | 11,169,550 | 9,052,044 |
| **Finland:** Wheat flour.barrels.. | 405,832 | 2,060,268 | 429,354 | 2,085,441 | 35,588 | 165,057 |
| **France:** | | | | | | |
| Wheat............bushels.. | 4,931,708 | 4,994,638 | 5,536,731 | 5,384,663 | 49,878,655 | 66,352,832 |
| Bacon............pounds.. | 2,096,868 | 236,160 | 197,353 | 25,416 | 44,712,253 | 5,766,832 |
| Lard..............do.... | 17,428,157 | 1,807,530 | 5,307,986 | 573,493 | 32,172,876 | 3,503,946 |
| **Germany:** | | | | | | |
| Corn..............bushels.. | 6,545,521 | 3,696,182 | 303,303 | 225,209 | 15,785 | 16,500 |
| Wheat..............do.... | 12,112,223 | 11,950,009 | 10,983,060 | 10,604,692 | 2,652,128 | 2,487,115 |
| Wheat flour........barrels.. | 170,345 | 860,305 | 176,485 | 891,171 | 8,240 | 42,841 |
| Lard..............pounds.. | 160,862,204 | 18,079,275 | 146,208,598 | 16,593,043 | 3,878,433 | 412,751 |
| Lard, neutral.........do.... | 9,368,924 | 1,078,006 | 6,309,792 | 709,101 | 312,933 | 44,176 |
| Oleo oil..............do.... | 17,480,760 | 2,054,694 | 16,180,268 | 1,631,254 | 1,001,252 | 98,081 |
| **Hongkong:** Wheat flour, barrels.................... | 1,301,306 | 5,126,960 | 1,141,095 | 4,501,672 | 626,978 | 2,840,779 |
| **Italy:** | | | | | | |
| Wheat............bushels.. | 7,217,479 | 7,419,597 | 1,839,830 | 1,789,400 | 47,122,740 | 66,530,785 |
| Lard.............pounds.. | 6,106,153 | 657,097 | 5,958,983 | 616,948 | 4,123,209 | 451,326 |
| **Japan:** Wheat flour...barrels.. | 878,623 | 3,383,842 | 793,269 | 3,045,532 | 68,542 | 279,315 |
| **Mexico:** | | | | | | |
| Corn..............bushels.. | 543,340 | 407,897 | 467,424 | 379,675 | 1,587,420 | 1,388,902 |
| Wheat..............do.... | 644,377 | 665,780 | 306,376 | 313,910 | 296,581 | 380,697 |
| Lard.............pounds.. | 8,468,353 | 977,313 | 3,294,437 | 392,580 | 3,191,515 | 365,024 |
| **Netherlands:** | | | | | | |
| Corn..............bushels.. | 7,192,420 | 4,071,068 | 373,770 | 287,417 | 15,875,674 | 12,969,647 |
| Wheat..............do.... | 14,832,000 | 14,805,115 | 19,949,519 | 19,380,347 | 31,551,992 | 42,070,210 |
| Wheat flour........barrels.. | 859,987 | 4,279,394 | 958,063 | 4,669,565 | 1,725,807 | 10,553,446 |
| Bacon............pounds.. | 7,639,281 | 906,263 | 1,718,481 | 204,260 | 8,284,647 | 1,199,393 |
| Lard..............do.... | 43,383,774 | 4,940,671 | 43,469,536 | 4,859,367 | 22,245,433 | 2,589,995 |
| Lard, neutral.........do.... | 27,123,927 | 3,090,156 | 13,174,294 | 1,438,696 | 9,847,645 | 1,142,321 |
| Oleo oil..............do.... | 46,337,137 | 5,392,489 | 47,414,421 | 4,944,474 | 32,767,906 | 3,637,839 |
| **Norway:** Oleo oil.......do.... | 6,607,526 | 754,728 | 7,285,043 | 764,333 | 9,954,544 | 1,160,460 |
| **Philippine Islands:** Wheat flour............barrels.. | 370,939 | 1,485,195 | 236,902 | 944,747 | 303,792 | 1,647,098 |
| **United Kingdom:** | | | | | | |
| Corn..............bushels.. | 14,982,604 | 8,652,721 | 540,515 | 388,620 | 2,840,252 | 2,297,878 |
| Wheat..............do.... | 31,548,507 | 29,647,560 | 27,961,348 | 26,015,351 | 65,911,501 | 80,089,502 |
| Wheat flour........barrels.. | 2,428,167 | 11,989,155 | 2,809,800 | 13,805,674 | 4,156,097 | 23,668,245 |
| Bacon............pounds.. | 138,133,416 | 17,758,929 | 132,819,680 | 18,103,518 | 201,042,923 | 28,388,432 |
| Hams and shoulders..do.... | 134,016,686 | 17,773,973 | 146,007,141 | 20,558,228 | 179,376,833 | 25,440,034 |
| Lard..............do.... | 168,379,790 | 18,796,802 | 164,632,676 | 18,412,791 | 189,349,874 | 20,650,513 |
| Oleo oil..............do.... | 8,008,915 | 964,101 | 9,243,952 | 1,010,834 | 14,361,603 | 1,734,445 |
| Pork, pickled.........do.... | 14,619,714 | 1,688,301 | 5,571,720 | 624,462 | 6,534,240 | 700,078 |

**Table 193.**—*Shipments of principal domestic farm and forest products from the United States to Hawaii and Porto Rico, 1913–1915.*

[These shipments are not included in the domestic exports from or imports into the United States.]

| Possession and article. | Year ending June 30— | | | | | |
|---|---|---|---|---|---|---|
| | 1913 | | 1914 | | 1915 | |
| | Quantity. | Value. | Quantity. | Value. | Quantity. | Value. |
| HAWAII. | | | | | | |
| Dairy products......pounds.. | 3,937,495 | $578,337 | 4,275,534 | $562,516 | 4,915,195 | $582,811 |
| Meat products.............. | ............ | 719,974 | ............ | 528,960 | ............ | 535,687 |
| Grain and grain products..... | ............ | 2,282,034 | ............ | 2,221,197 | ............ | 2,479,349 |
| Rice.................pounds.. | 4,033,865 | 189,986 | 5,031,515 | 216,252 | 974.272 | 39,755 |
| Lumber..................... | ............ | 1,502,117 | ............ | 876,544 | ............ | 1,131,768 |
| PORTO RICO. | | | | | | |
| Dairy products......pounds.. | 2,833,463 | 288,465 | 2,210,881 | 207,817 | 2,496,076 | 267,491 |
| Meat products.............. | ............ | 3,211,247 | ............ | 3,678,741 | ............ | 3,382,875 |
| Beans and dried peas.bushels.. | 199,823 | 534,965 | 163,843 | 469,661 | 190,793 | 672,163 |
| Grain and grain products...... | ............ | 2,585,826 | ............ | 2,248,045 | ............ | 2,756,391 |
| Rice.................pounds.. | 128,748,080 | 5,069,527 | 139,836,581 | 5,306,364 | 127,310,116 | 4,851,533 |
| Sugar ..................do.... | 13,443,894 | 636,012 | 16,855,067 | 727,966 | 12,329,041 | 648,414 |
| Tobacco................do.... | 2,337,501 | 373,975 | 1,627,405 | 327,790 | 1,106,120 | 178,924 |
| Lumber..................... | ............ | 1,191,154 | ............ | 969,124 | ............ | 633,747 |

**Table 194.**—*Shipments of principal domestic farm products from Hawaii and Porto Rico to the United States.*

| Possession and article. | Year ending June 30— | | | | | |
|---|---|---|---|---|---|---|
| | 1913 | | 1914 | | 1915 | |
| | Quantity. | Value. | Quantity. | Value. | Quantity. | Value. |
| HAWAII. | | | | | | |
| Coffee................pounds.. | 2,149,875 | $352,965 | 4,430,722 | $657,853 | 3,191,274 | $486,054 |
| Pineapples, canned........... | ............ | 3,566,201 | ............ | 4,536,919 | ............ | 5,986,190 |
| Sugar................pounds.. | 1,085,362,344 | 36,607,820 | 1,114,750,702 | 33,187,920 | 1,280,683,812 | 52,949,697 |
| PORTO RICO. | | | | | | |
| Grapefruit.............boxes.. | 216,216 | 726,687 | 206,200 | 751,769 | 276,550 | 834,356 |
| Oranges.................do.... | 353,633 | 740,010 | 348,870 | 752,088 | 200,268 | 378,092 |
| Pineapples.................. | ............ | 1,142,007 | ............ | 1,245,215 | ............ | 1,723,694 |
| Molasses and sirup...gallons.. | 11,150,572 | 607,747 | 15,577,832 | 927,227 | 12,004,811 | 658,661 |
| Sugar...............pounds.. | 765,420,310 | 26,619,158 | 641,252,527 | 20,239,831 | 588,922,493 | 27,277,839 |
| Tobacco, leaf...........do.... | 6,952,467 | 3,006,854 | 6,308,227 | 2,961,614 | 7,035,777 | 2,954,804 |

TABLE 195.—*Destination of principal farm products exported from the United States, 1912–1915.*

| Article, and country to which consigned. | Quantity. | | | | Per cent of total. | | | |
|---|---|---|---|---|---|---|---|---|
| | Year ending June 30— | | | | | | | |
| | 1912 | 1913 | 1914 | 1915 (preliminary). | 1912 | 1913 | 1914 | 1915 (preliminary). |
| ANIMAL MATTER. | | | | | | | | |
| Cattle: | *Number.* | *Number.* | *Number.* | *Number.* | *Per ct.* | *Per ct.* | *Per ct.* | *Per ct.* |
| Canada | 6,705 | 11,691 | 8,957 | 751 | 6.4 | 47.3 | 48.7 | 13.7 |
| United Kingdom | 76,925 | 1,773 | | | 72.9 | 7.2 | | |
| Other countries | 21,876 | 11,250 | 9,419 | 4,733 | 20.7 | 45.5 | 51.3 | 86.3 |
| Total | 105,506 | 24,714 | 18,376 | 5,484 | 100.0 | 100.0 | 100.0 | 100.0 |
| Horses: | | | | | | | | |
| Canada | 31,910 | 26,560 | 17,700 | 42,036 | 91.6 | 92.5 | 77.7 | 14.5 |
| United Kingdom | 517 | 430 | 609 | 92,737 | 1.5 | 1.5 | 2.7 | 32.1 |
| Other countries | 2,401 | 1,717 | 4,467 | 154,567 | 6.9 | 6.0 | 19.6 | 53.4 |
| Total | 34,828 | 28,707 | 22,776 | 289,340 | 100.0 | 100.0 | 100.0 | 100.0 |
| Butter: | *Pounds.* | *Pounds.* | *Pounds.* | *Pounds.* | | | | |
| Central American States and British Honduras | 565,320 | 775,246 | 810,254 | 726,562 | 9.3 | 21.6 | 21.9 | 7.4 |
| West Indies and Bermuda | 1,488,538 | 1,392,508 | 1,158,111 | 1,144,352 | 24.4 | 38.8 | 31.4 | 11.6 |
| Other countries | 4,038,377 | 1,417,846 | 1,725,232 | 7,979,790 | 66.3 | 39.6 | 46.7 | 81.0 |
| Total | 6,092,235 | 3,585,600 | 3,693,597 | 9,850,704 | 100.0 | 100.0 | 100.0 | 100.0 |
| Meat products: | | | | | | | | |
| Beef products— | | | | | | | | |
| Beef, canned— | | | | | | | | |
| United Kingdom | 5,743,114 | 3,117,149 | 1,157,104 | 64,700,738 | 52.1 | 45.6 | 33.4 | 86.0 |
| Other countries | 5,283,317 | 3,723,199 | 2,307,629 | 10,573,870 | 47.9 | 54.4 | 66.6 | 14.0 |
| Total | 11,026,431 | 6,840,348 | 3,464,733 | 75,274,608 | 100.0 | 100.0 | 100.0 | 100.0 |
| Beef, fresh— | | | | | | | | |
| Panama | 5,400,785 | 5,935,198 | 5,534,391 | 3,706,596 | 35.4 | 80.6 | 86.6 | 2.2 |
| United Kingdom | 8,872,378 | 126,885 | | 54,497,192 | 58.1 | 1.7 | | 32.0 |
| Other countries | 991,157 | 1,300,305 | 860,013 | 112,237,146 | 6.5 | 17.7 | 13.4 | 65.8 |
| Total | 15,264,320 | 7,362,388 | 6,394,404 | 170,440,934 | 100.0 | 100.0 | 100.0 | 100.0 |
| Beef, pickled, and other cured— | | | | | | | | |
| Canada | 1,752,093 | 712,086 | 1,331,150 | 1,659,165 | 4.6 | 2.8 | 5.7 | 5.2 |
| Germany | 4,616,317 | 3,080,823 | 1,757,786 | 378,548 | 12.1 | 11.9 | 7.6 | 1.2 |
| Newfoundland and Labrador | 5,077,404 | 3,807,237 | 4,935,657 | 4,331,261 | 13.3 | 14.7 | 21.2 | 13.6 |
| West Indies and Bermuda | 5,493,842 | 4,274,549 | 3,900,281 | 2,697,974 | 14.4 | 16.5 | 16.8 | 8.5 |
| United Kingdom | 8,747,355 | 5,929,949 | 4,113,347 | 10,994,101 | 23.0 | 22.9 | 17.7 | 34.5 |
| Other countries | 12,400,896 | 8,052,275 | 7,227,753 | 11,813,694 | 32.6 | 31.2 | 31.0 | 37.0 |
| Total | 38,087,907 | 25,856,919 | 23,265,974 | 31,874,743 | 100.0 | 100.0 | 100.0 | 100.0 |
| Oleo oil— | | | | | | | | |
| Germany | 18,042,333 | 17,480,760 | 16,180,268 | 1,001,252 | 14.3 | 18.8 | 16.7 | 1.2 |
| Netherlands | 66,894,182 | 46,337,137 | 47,414,421 | 32,767,906 | 52.9 | 49.9 | 48.9 | 40.7 |
| Norway | 9,004,322 | 6,607,526 | 7,285,043 | 9,954,544 | 7.1 | 7.1 | 7.5 | 12.4 |
| United Kingdom | 9,959,942 | 8,008,915 | 9,243,952 | 14,361,603 | 7.9 | 8.6 | 9.5 | 17.8 |
| Other countries | 22,566,345 | 14,415,419 | 16,893,381 | 22,396,641 | 17.8 | 15.6 | 17.4 | 27.9 |
| Total | 126,467,124 | 92,849,757 | 97,017,065 | 80,481,946 | 100.0 | 100.0 | 100.0 | 100.0 |

TABLE 195.—*Destination of principal farm products exported from the United States, 1912–1915*—Continued.

| Article, and country to which consigned. | Quantity. | | | | Per cent of total. | | | |
|---|---|---|---|---|---|---|---|---|
| | Year ending June 30— | | | | | | | |
| | 1912 | 1913 | 1914 | 1915 (preliminary). | 1912 | 1913 | 1914 | 1915 (preliminary). |
| ANIMAL MATTER—continued. | | | | | | | | |
| Meat products—Con. | | | | | | | | |
| Lard compounds— | *Pounds.* | *Pounds.* | *Pounds.* | *Pounds.* | *Per ct.* | *Per ct.* | *Per ct.* | *Per ct.* |
| Cuba | 17,214,452 | 17,525,708 | 14,673,201 | 19,046,472 | 27.5 | 26.0 | 25.2 | 27.2 |
| Mexico | 6,768,838 | 4,127,593 | 3,119,285 | 3,772,943 | 10.8 | 6.1 | 5.4 | 5.4 |
| United Kingdom | 17,853,640 | 21,115,679 | 19,929,949 | 26,357,467 | 28.6 | 31.3 | 34.2 | 37.7 |
| Other countries | 20,685,958 | 24,687,857 | 20,581,129 | 20,803,732 | 33.1 | 36.6 | 35.2 | 29.7 |
| Total | 62,522,888 | 67,456,832 | 58,303,564 | 69,980,614 | 100.0 | 100.0 | 100.0 | 100.0 |
| Pork products— | | | | | | | | |
| Bacon— | | | | | | | | |
| Belgium | 4,503,110 | 9,140,688 | 5,110,170 | 5,737,181 | 2.2 | 4.5 | 2.6 | 1.7 |
| Canada | 3,342,270 | 6,868,480 | 11,082,930 | 10,025,242 | 1.6 | 3.4 | 5.7 | 2.9 |
| Cuba | 4,822,680 | 6,658,202 | 13,733,773 | 13,360,139 | 2.3 | 3.3 | 7.1 | 3.9 |
| France | 9,418,140 | 2,096,868 | 197,353 | 44,712,253 | 4.5 | 1.0 | .1 | 12.9 |
| Netherlands | 7,271,025 | 7,639,281 | 1,718,481 | 8,284,647 | 3.5 | 3.8 | .9 | 2.4 |
| United Kingdom | 147,448,565 | 138,133,416 | 132,819,680 | 201,042,923 | 70.7 | 68.7 | 68.5 | 58.0 |
| Other countries | 31,768,418 | 30,456,649 | 29,301,865 | 63,555,842 | 15.2 | 15.3 | 15.1 | 18.2 |
| Total | 208,574,208 | 200,993,584 | 193,964,252 | 346,718,227 | 100.0 | 100.0 | 100.0 | 100.0 |
| Hams and shoulders, cured— | | | | | | | | |
| Belgium | 15,017,836 | 5,821,638 | 4,080,669 | 6,596,068 | 7.4 | 3.6 | 2.5 | 3.2 |
| Canada | 6,281,607 | 6,785,477 | 4,006,649 | 1,514,602 | 3.1 | 4.3 | 2.4 | .7 |
| Cuba | 5,084,977 | 6,002,471 | 5,637,829 | 6,842,425 | 2.5 | 3.8 | 3.4 | 3.4 |
| United Kingdom | 169,675,214 | 134,016,686 | 146,007,141 | 179,376,833 | 83.2 | 84.0 | 88.0 | 88.1 |
| Other countries | 7,984,857 | 6,918,415 | 6,149,503 | 9,371,185 | 3.8 | 4.3 | 3.7 | 4.6 |
| Total | 204,044,491 | 159,544,687 | 165,881,791 | 203,701,114 | 100.0 | 100.0 | 100.0 | 100.0 |
| Lard— | | | | | | | | |
| Belgium | 21,743,806 | 18,761,624 | 15,915,380 | 5,128,630 | 4.1 | 3.6 | 3.3 | 1.1 |
| Canada | 7,968,353 | 11,079,696 | 15,995,669 | 7,721,616 | 1.5 | 2.1 | 3.3 | 1.6 |
| Cuba | 42,518,701 | 46,526,427 | 49,609,751 | 45,349,283 | 8.0 | 9.0 | 10.3 | 9.5 |
| France | 21,474,920 | 17,428,157 | 5,307,986 | 32,172,876 | 4.6 | 3.4 | 1.1 | 6.8 |
| Germany | 159,473,899 | 160,862,204 | 146,208,598 | 3,878,433 | 30.0 | 31.0 | 30.4 | .8 |
| Italy | 3,170,799 | 6,106,153 | 5,958,983 | 4,123,209 | .6 | 1.2 | 1.2 | .9 |
| Mexico | 8,366,011 | 8,468,353 | 3,294,437 | 3,191,515 | 1.6 | 1.6 | .7 | .7 |
| Netherlands | 38,675,175 | 43,383,774 | 43,469,536 | 22,245,433 | 7.3 | 8.4 | 9.0 | 4.7 |
| United Kingdom | 186,125,234 | 168,379,790 | 164,632,676 | 189,349,874 | 35.0 | 32.4 | 34.2 | 39.8 |
| Other countries | 39,708,967 | 38,029,206 | 31,064,776 | 162,371,039 | 7.3 | 7.3 | 6.5 | 34.1 |
| Total | 532,255,865 | 519,025,384 | 481,457,792 | 475,531,908 | 100.0 | 100.0 | 100.0 | 100.0 |
| Lard, neutral— | | | | | | | | |
| Germany | 12,666,387 | 9,368,924 | 6,309,792 | 312,933 | 20.3 | 20.9 | 21.5 | 1.2 |
| Netherlands | 40,110,521 | 27,123,927 | 13,174,294 | 9,847,645 | 64.4 | 60.6 | 44.9 | 37.8 |
| Other countries | 9,541,001 | 8,284,841 | 9,839,700 | 15,860,476 | 15.3 | 18.5 | 33.6 | 61.0 |
| Total | 62,317,909 | 44,777,692 | 29,323,786 | 26,021,054 | 100.0 | 100.0 | 100.0 | 100.0 |
| Pork, pickled— | | | | | | | | |
| Canada | 11,156,806 | 9,436,506 | 12,825,741 | 8,500,049 | 19.8 | 17.6 | 28.2 | 18.6 |
| Cuba | 9,988,925 | 9,141,098 | 4,090,780 | 3,874,892 | 17.7 | 17.0 | 9.0 | 8.5 |
| Newfoundland and Labrador | 6,570,510 | 5,672,961 | 7,911,743 | 5,244,462 | 11.7 | 10.6 | 17.4 | 11.5 |
| United Kingdom | 13,500,861 | 14,619,714 | 5,571,720 | 6,534,240 | 24.0 | 27.2 | 12.2 | 14.3 |
| Other countries | 15,104,367 | 14,878,744 | 15,143,101 | 21,501,931 | 26.8 | 27.6 | 33.2 | 47.1 |
| Total | 56,321,469 | 53,749,023 | 45,543,085 | 45,655,574 | 100.0 | 100.0 | 100.0 | 100.0 |

TABLE 195.—*Destination of principal farm products exported from the United States, 1912–1915*—Continued.

| Article, and country to which consigned. | Quantity. | | | | Per cent of total. | | | |
|---|---|---|---|---|---|---|---|---|
| | Year ending June 30— | | | | | | | |
| | 1912 | 1913 | 1914 | 1915 (preliminary). | 1912 | 1913 | 1914 | 1915 (preliminary). |
| VEGETABLE MATTER. | | | | | | | | |
| Cotton: | *Pounds.* | *Pounds.* | *Pounds.* | *Pounds.* | *Per ct.* | *Per ct.* | *Per ct.* | *Per ct.* |
| Austria-Hungary | 62,781,705 | 56,591,125 | 53,255,407 | 227,373 | 1.1 | 1.2 | 1.1 | .0 |
| Belgium | 105,951,588 | 113,483,414 | 113,736,761 | 2,528,388 | 1.9 | 2.5 | 2.4 | .1 |
| Canada | 90,832,199 | 76,007,216 | 75,496,339 | 91,395,082 | 1.6 | 1.7 | 1.6 | 2.1 |
| France | 614,146,911 | 537,493,608 | 569,699,520 | 346,349,629 | 11.1 | 11.8 | 12.0 | 7.9 |
| Germany | 1,578,085,504 | 1,221,943,252 | 1,442,161,777 | 147,096,823 | 28.5 | 26.8 | 30.3 | 3.3 |
| Italy | 318,038,666 | 250,411,639 | 268,678,515 | 563,700,142 | 5.7 | 5.5 | 5.6 | 12.8 |
| Japan | 240,467,144 | 198,389,341 | 176,720,027 | 214,403,032 | 4.3 | 4.3 | 3.7 | 4.9 |
| Mexico | 8,064,183 | 10,488,465 | 17,335,397 | 19,863,621 | .1 | .2 | .4 | .5 |
| Russia, European | 55,878,081 | 37,453,772 | 49,538,075 | 41,062,654 | 1.0 | .8 | 1.0 | .9 |
| Spain | 156,749,987 | 158,976,935 | 148,669,641 | 232,251,950 | 2.8 | 3.5 | 3.1 | 5.3 |
| United Kingdom | 2,171,554,173 | 1,858,449,027 | 1,790,750,498 | 1,959,874,664 | 39.2 | 40.7 | 37.6 | 44.5 |
| Other countries | 132,575,288 | 42,607,881 | 54,898,581 | 784,825,141 | 2.7 | 1.0 | 1.2 | 17.7 |
| Total | 5,535,125,429 | 4,562,295,675 | 4,760,940,538 | 4,403,578,499 | 100.0 | 100.0 | 100.0 | 100.0 |
| Fruits: | | | | | | | | |
| Apples, dried— | | | | | | | | |
| Germany | 27,598,728 | 17,970,592 | 17,645,697 | 108,434 | 51.4 | 43.2 | 52.6 | .3 |
| Netherlands | 14,396,795 | 12,846,054 | 9,147,104 | 5,200,178 | 26.8 | 30.9 | 27.3 | 12.2 |
| Other countries | 11,669,116 | 10,757,916 | 6,773,359 | 37,280,557 | 21.8 | 25.9 | 20.1 | 87.5 |
| Total | 53,664,639 | 41,574,562 | 33,566,160 | 42,589,169 | 100.0 | 100.0 | 100.0 | 100.0 |
| Apples, fresh— | *Barrels.* | *Barrels.* | *Barrels.* | *Barrels.* | | | | |
| Germany | 122,823 | 272,382 | 168,792 | 1,747,386 | 8.4 | 12.7 | 11.2 | 74.3 |
| United Kingdom | 994,524 | 1,318,426 | 827,028 | 318,840 | 68.3 | 61.3 | 54.9 | 13.6 |
| Other countries | 339,034 | 559,324 | 510,749 | 285,275 | 23.3 | 26.0 | 33.9 | 12.1 |
| Total | 1,456,381 | 2,150,132 | 1,506,569 | 2,351,501 | 100.0 | 100.0 | 100.0 | 100.0 |
| Apricots, dried— | *Pounds.* | *Pounds.* | *Pounds.* | *Pounds.* | | | | |
| France | 1,169,110 | 4,214,153 | 3,074,146 | 1,911,296 | 8.7 | 12.0 | 17.7 | 8.0 |
| Germany | 5,223,162 | 7,806,944 | 3,841,032 | 289,850 | 38.9 | 22.3 | 22.1 | 1.2 |
| Netherlands | 960,757 | 3,625,314 | 2,064,471 | 1,285,632 | 7.2 | 10.4 | 11.9 | 5.4 |
| United Kingdom | 3,012,091 | 13,174,672 | 4,473,534 | 9,017,358 | 22.5 | 37.6 | 25.7 | 37.9 |
| Other countries | 3,048,310 | 6,195,647 | 3,948,509 | 11,260,206 | 22.7 | 17.7 | 22.6 | 47.5 |
| Total | 13,413,430 | 35,016,730 | 17,401,692 | 23,764,342 | 100.0 | 100.0 | 100.0 | 100.0 |
| Oranges— | *Boxes.* | *Boxes.* | *Boxes.* | *Boxes.* | | | | |
| Canada | 1,152,866 | 1,017,545 | 1,491,539 | 1,682,824 | 96.3 | 95.7 | 95.7 | 95.6 |
| Other countries | 44,497 | 45,688 | 67,382 | 76,581 | 3.7 | 4.3 | 4.3 | 4.4 |
| Total | 1,197,363 | 1,063,233 | 1,558,921 | 1,759,405 | 100.0 | 100.0 | 100.0 | 100.0 |
| Prunes— | *Pounds.* | *Pounds.* | *Pounds.* | *Pounds.* | | | | |
| Canada | 13,503,157 | 10,956,827 | 12,757,585 | 9,321,355 | 18.2 | 9.3 | 18.3 | 21.4 |
| France | 6,158,115 | 11,962,280 | 13,514,086 | 1,129,323 | 8.3 | 10.1 | 19.4 | 2.6 |
| Germany | 31,416,210 | 49,084,901 | 17,417,865 | 1,100 | 42.3 | 41.6 | 24.9 | .0 |
| United Kingdom | 6,586,572 | 8,492,618 | 11,175,968 | 10,368,576 | 8.9 | 7.2 | 16.0 | 23.8 |
| Other countries | 16,664,020 | 37,454,249 | 14,948,207 | 22,658,538 | 22.3 | 31.8 | 21.4 | 52.2 |
| Total | 74,328,074 | 117,950,875 | 69,813,711 | 43,478,892 | 100.0 | 100.0 | 100.0 | 100.0 |
| Fruits, canned— | *Dollars.* | *Dollars.* | *Dollars.* | *Dollars.* | | | | |
| United Kingdom | 2,690,834 | 3,892,646 | 3,182,051 | 4,924,824 | 67.1 | 69.5 | 65.4 | 81.2 |
| Other countries | 1,321,629 | 1,706,727 | 1,681,895 | 1,139,941 | 32.9 | 30.5 | 34.6 | 18.8 |
| Total | 4,012,463 | 5,599,373 | 4,863,946 | 6,064,765 | 100.0 | 100.0 | 100.0 | 100.0 |
| Glucose and grape sugar: | *Pounds.* | *Pounds.* | *Pounds.* | *Pounds.* | | | | |
| United Kingdom | 137,249,475 | 155,597,018 | 162,715,262 | 131,751,252 | 80.2 | 77.7 | 81.5 | 83.1 |
| Other countries | 33,906,784 | 44,552,228 | 36,815,612 | 26,711,256 | 19.8 | 22.3 | 18.5 | 16.9 |
| Total | 171,156,259 | 200,149,246 | 199,530,874 | 158,462,508 | 100.0 | 100.0 | 100.0 | 100.0 |

TABLE 195.—*Destination of principal farm products exported from the United States, 1912–1915*—Continued.

| Article, and country to which consigned. | Quantity. | | | | Per cent of total. | | | |
|---|---|---|---|---|---|---|---|---|
| | Year ending June 30— | | | | | | | |
| | 1912 | 1913 | 1914 | 1915 (preliminary). | 1912 | 1913 | 1914 | 1915 (preliminary). |
| VEGETABLE MATTER—continued. | | | | | | | | |
| Grain and grain products: | | | | | | | | |
| Corn— | *Bushels.* | *Bushels.* | *Bushels.* | *Bushels.* | *Per ct.* | *Per ct.* | *Per ct.* | *Per ct.* |
| Belgium | 1,406,508 | 1,648,089 | 60,227 | 103,927 | 3.5 | 3.4 | .6 | .2 |
| Canada | 9,568,574 | 8,097,882 | 4,641,737 | 8,283,156 | 23.9 | 16.5 | 49.5 | 17.0 |
| Cuba | 2,117,724 | 2,372,678 | 2,410,156 | 2,267,305 | 5.3 | 4.8 | 25.7 | 4.6 |
| Denmark | 1,545,624 | 5,389,897 | 118 | 11,169,550 | 3.9 | 11.0 | ....... | 22.9 |
| Germany | 6,800,562 | 6,545,521 | 303,303 | 15,785 | 17.0 | 13.3 | 3.2 | .0 |
| Mexico | 1,168,145 | 543,340 | 467,424 | 1,587,420 | 2.9 | 1.1 | 5.0 | 3.3 |
| Netherlands | 5,657,976 | 7,192,420 | 373,770 | 15,875,674 | 14.1 | 14.7 | 4.0 | 32.5 |
| United Kingdom | 10,616,488 | 14,982,604 | 540,515 | 2,840,252 | 26.5 | 30.5 | 5.8 | 5.8 |
| Other countries | 1,157,194 | 2,292,536 | 583,605 | 6,643,222 | 2.9 | 4.7 | 6.2 | 13.7 |
| Total | 40,038,795 | 49,064,967 | 9,380,855 | 48,786,291 | 100.0 | 100.0 | 100.0 | 100.0 |
| Wheat— | | | | | | | | |
| Belgium | 4,054,171 | 10,601,248 | 12,873,372 | 5,320,685 | 13.4 | 11.6 | 13.9 | 2.0 |
| Canada | 537,240 | 851,139 | 4,113,701 | 19,848,674 | 1.8 | .9 | 4.5 | 7.6 |
| France | 35,977 | 4,931,708 | 5,536,731 | 49,878,655 | .1 | 5.4 | 6.0 | 19.2 |
| Germany | 1,586,666 | 12,112,223 | 10,983,060 | 2,652,128 | 5.3 | 13.2 | 11.9 | 1.0 |
| Italy | 533,009 | 7,217,479 | 1,839,830 | 47,122,740 | 1.8 | 7.9 | 2.0 | 18.1 |
| Mexico | 1,491,156 | 644,377 | 306,376 | 296,581 | 4.9 | .7 | .3 | .1 |
| Netherlands | 3,388,444 | 14,832,000 | 19,949,519 | 31,551,992 | 11.2 | 16.2 | 21.6 | 12.2 |
| United Kingdom | 15,765,454 | 31,548,507 | 27,961,348 | 65,911,501 | 52.3 | 34.4 | 30.3 | 25.4 |
| Other countries | 2,768,095 | 8,864,293 | 8,829,838 | 37,059,577 | 9.2 | 9.7 | 9.5 | 14.4 |
| Total | 30,160,212 | 91,602,974 | 92,393,775 | 259,642,533 | 100.0 | 100.0 | 100.0 | 100.0 |
| Wheat flour— | *Barrels.* | *Barrels.* | *Barrels.* | *Barrels.* | | | | |
| Brazil | 625,399 | 583,418 | 748,612 | 707,705 | 5.7 | 5.1 | 6.3 | 4.4 |
| Canada | 99,760 | 98,665 | 122,752 | 110,927 | .9 | .9 | 1.0 | .7 |
| China | 741,192 | 127,814 | 136,374 | 13,273 | 6.7 | 1.1 | 1.2 | .1 |
| Cuba | 842,168 | 907,786 | 892,705 | 924,989 | 7.7 | 8.0 | 7.6 | 5.7 |
| Finland | 175,575 | 405,832 | 429,354 | 35,588 | 1.6 | 3.6 | 3.6 | .2 |
| Germany | 130,328 | 170,345 | 176,485 | 8,240 | 1.2 | 1.5 | 1.5 | .1 |
| Haiti | 324,736 | 288,495 | 208,206 | 112,620 | 3.0 | 2.5 | 1.8 | .7 |
| Hongkong | 1,491,073 | 1,301,306 | 1,141,095 | 626,978 | 13.5 | 11.4 | 9.7 | 3.9 |
| Japan | 716,347 | 878,623 | 793,269 | 68,542 | 6.5 | 7.7 | 6.7 | .4 |
| Netherlands | 675,429 | 859,987 | 958,063 | 1,725,807 | 6.1 | 7.5 | 8.1 | 10.7 |
| Philippine Islands | 308,671 | 370,939 | 236,902 | 303,792 | 2.8 | 3.3 | 2.0 | 1.9 |
| United Kingdom | 2,372,797 | 2,428,167 | 2,809,800 | 4,156,097 | 21.6 | 21.3 | 23.8 | 25.7 |
| Other countries | 2,503,012 | 2,973,428 | 3,167,784 | 7,388,207 | 22.7 | 26.1 | 26.7 | 45.5 |
| Total | 11,006,487 | 11,394,805 | 11,821,461 | 16,182,765 | 100.0 | 100.0 | 100.0 | 100.0 |
| Hops: | *Pounds.* | *Pounds.* | *Pounds.* | *Pounds.* | | | | |
| Canada | 1,325,506 | 1,035,729 | 1,214,028 | 1,071,601 | 10.9 | 5.9 | 5.0 | 6.6 |
| United Kingdom | 10,463,164 | 15,409,093 | 22,219,620 | 13,823,889 | 85.8 | 87.6 | 91.6 | 85.3 |
| Other countries | 401,993 | 1,146,373 | 829,248 | 1,314,953 | 3.3 | 6.5 | 3.4 | 8.1 |
| Total | 12,190,663 | 17,591,195 | 24,262,896 | 16,210,443 | 100.0 | 100.0 | 100.0 | 100.0 |
| Oil cake and oil-cake meal: | | | | | | | | |
| Cottonseed— | | | | | | | | |
| Belgium | 42,981,422 | 38,953,330 | 19,685,564 | 223,100 | 3.3 | 3.5 | 2.5 | .0 |
| Denmark | 413,512,583 | 429,490,872 | 347,584,172 | 1,067,161,664 | 32.0 | 38.1 | 43.4 | 72.2 |
| Germany | 451,358,869 | 364,266,905 | 240,348,664 | 6,819,250 | 35.9 | 32.3 | 30.0 | .5 |
| Netherlands | 77,676,167 | 62,479,858 | 22,310,420 | 15,469,040 | 6.0 | 5.5 | 2.8 | 1.0 |
| United Kingdom | 247,440,239 | 163,960,512 | 131,292,496 | 173,948,786 | 19.1 | 14.5 | 16.4 | 11.8 |
| Other countries | 60,720,858 | 68,940,890 | 38,752,936 | 215,443,175 | 4.7 | 6.1 | 4.9 | 14.5 |
| Total | 1,293,090,138 | 1,128,092,367 | 799,974,252 | 1,479,065,015 | 100.0 | 100.0 | 100.0 | 100.0 |

TABLE 195.—*Destination of principal farm products exported from the United States, 1912–1915*—Continued.

| Article, and country to which consigned. | Quantity. | | | | Per cent of total. | | | |
|---|---|---|---|---|---|---|---|---|
| | Year ending June 30— | | | | | | | |
| | 1912 | 1913 | 1914 | 1915 (preliminary). | 1912 | 1913 | 1914 | 1915 (preliminary). |
| VEGETABLE MATTER—continued. | | | | | | | | |
| Oil cake and oil-cake meal—Contd. | | | | | | | | |
| Linseed or flaxseed— | *Pounds.* | *Pounds.* | *Pounds.* | *Pounds.* | *Per ct.* | *Per ct.* | *Per ct.* | *Per ct.* |
| Belgium | 239 849,696 | 330,952,259 | 332,697,680 | 26,931,718 | 40.2 | 39.5 | 50.2 | 5.1 |
| France | 40,747,747 | 49,700,150 | 20,671,619 | 1,375,773 | 6.9 | 5.9 | 3.1 | .3 |
| Netherlands | 265,879,242 | 391,513,427 | 266,792,954 | 431,248,843 | 44.6 | 46.7 | 40.2 | 82.2 |
| United Kingdom | 36,358,331 | 53,796,998 | 29,084,892 | 22,829,656 | 6.1 | 6.4 | 4.4 | 4.4 |
| Other countries | 13,279,520 | 12,156,820 | 13,621,494 | 42,408,444 | 2.2 | 1.5 | 2.1 | 8.0 |
| Total | 596,114,536 | 838,119,654 | 662,868,639 | 524,794,434 | 100.0 | 100.0 | 100.0 | 100.0 |
| Oils, vegetable: | | | | | | | | |
| Cottonseed— | | | | | | | | |
| Argentina | 8,893,927 | 14,708,379 | 14,989,927 | 17,314,259 | 2.2 | 4.7 | 7.8 | 5.4 |
| Austria-Hungary | 9,222,768 | 8,475,683 | 4,211,198 | 70,394 | 2.3 | 2.7 | 2.2 | .0 |
| Belgium | 9,834,185 | 1,970,255 | 3,452,229 | 11,646 | 2.5 | .6 | 1.8 | .0 |
| Canada | 22,659,718 | 25,227,397 | 25,493,039 | 20,578,973 | 5.7 | 8.0 | 13.2 | 6.5 |
| France | 25,596,365 | 17,924,337 | 8,268,808 | 8,425,210 | 6.4 | 5.7 | 4.3 | 2.6 |
| Germany | 24,798,799 | 13,440,312 | 7,682,622 | 62,871 | 6.2 | 4.3 | 4.0 | .0 |
| Italy | 36,670,719 | 39,516,645 | 14,015,326 | 15,782,234 | 9.2 | 12.5 | 7.3 | 5.0 |
| Mexico | 28,961,136 | 23,743,576 | 6,219,064 | 4,821,390 | 7.2 | 7.5 | 3.2 | 1.5 |
| Netherlands | 97,590,174 | 75,349,314 | 26,994,772 | 90,979,466 | 24.4 | 23.9 | 14.0 | 28.6 |
| Norway | 8,028,128 | 8,986,253 | 6,985,490 | 26,442,259 | 2.0 | 2.9 | 3.6 | 8.3 |
| Turkey, European | 11,931,876 | 12,556,417 | 4,947,994 | 354,910 | 3.0 | 4.0 | 2.6 | .1 |
| United Kingdom | 71,420,689 | 31,845,444 | 31,071,865 | 84,378,878 | 17.9 | 10.1 | 16.1 | 26.5 |
| Other countries | 43,862,489 | 41,488,880 | 38,630,745 | 49,144,035 | 11.0 | 13.1 | 19.9 | 15.5 |
| Total | 399,470,973 | 315,232,892 | 192,963,079 | 318,366,525 | 100.0 | 100.0 | 100.0 | 100.0 |
| Tobacco, leaf, stems, and trimmings: | | | | | | | | |
| Belgium | 10,072,410 | 10,235,594 | 11,677,604 | 1,131,439 | 2.7 | 2.4 | 2.6 | .3 |
| British Africa | 6,357,617 | 8,377,246 | 6,600,312 | 4,655,691 | 1.7 | 2.0 | 1.5 | 1.3 |
| British Oceania | 10,870,147 | 17,516,283 | 13,186,680 | 9,042,967 | 2.9 | 4.2 | 2.9 | 2.6 |
| Canada | 15,095,925 | 16,309,480 | 17,688,562 | 16,156,268 | 4.0 | 3.9 | 3.9 | 4.6 |
| China | 6,635,350 | 6,641,628 | 11,445,697 | 3,478,641 | 1.7 | 1.6 | 2.5 | 1.0 |
| France | 47,186,921 | 49,131,788 | 54,915,178 | 37,710,975 | 12.4 | 11.7 | 12.2 | 10.8 |
| Germany | 41,964,300 | 30,054,681 | 32,057,051 | 10,018,503 | 11.0 | 7.2 | 7.1 | 2.9 |
| Italy | 39,403,429 | 44,779,059 | 45,190,995 | 24,279,246 | 10.4 | 10.7 | 10.0 | 7.0 |
| Japan | 2,947,452 | 5,266,034 | 3,696,273 | 3,110,555 | .8 | 1.3 | .8 | .9 |
| Netherlands | 27,277,631 | 26,688,355 | 28,233,746 | 21,223,143 | 7.2 | 6.4 | 6.3 | 6.1 |
| Spain | 28,674,906 | 23,081,022 | 16,822,696 | 7,030 | 7.5 | 5.5 | 3.7 | .0 |
| United Kingdom | 120,936,936 | 150,110,570 | 174,779,326 | 189,345,349 | 31.8 | 35.8 | 38.9 | 54.4 |
| Other countries | 22,422,296 | 30,605,166 | 33,455,862 | 28,186,284 | 5.9 | 7.3 | 7.6 | 8.1 |
| Total | 379,845,320 | 418,796,906 | 449,749,982 | 348,346,091 | 100.0 | 100.0 | 100.0 | 100.0 |
| FOREST PRODUCTS. | | | | | | | | |
| Naval stores: | | | | | | | | |
| Rosin— | *Barrels.* | *Barrels.* | *Barrels.* | *Barrels.* | | | | |
| Argentina | 122,333 | 131,286 | 102,028 | 143,407 | 4.9 | 4.7 | 4.2 | 10.4 |
| Austria-Hungary | 103,959 | 84,070 | 66,257 | ............ | 4.2 | 3.0 | 2.7 | ...... |
| Belgium | 163,345 | 141,013 | 111,735 | 80,267 | 6.6 | 5.0 | 4.6 | 5.8 |
| Brazil | 176,964 | 180,701 | 99,632 | 105,529 | 7.2 | 6.4 | 4.1 | 7.7 |
| Canada | 93,464 | 86,702 | 77,064 | 74,113 | 3.8 | 3.1 | 3.2 | 5.4 |
| Germany | 681,476 | 809,745 | 796,757 | 53,331 | 27.5 | 28.9 | 33.0 | 3.9 |
| Italy | 102,685 | 116,019 | 109,380 | 94,217 | 4.1 | 4.1 | 4.5 | 6.9 |
| Netherlands | 194,552 | 228,360 | 247,339 | 48,883 | 7.9 | 8.1 | 10.2 | 3.6 |
| Russia, European | 98,103 | 143,336 | 144,653 | 5,447 | 4.0 | 5.1 | 6.0 | .4 |
| United Kingdom | 503,516 | 632,515 | 504,400 | 500,545 | 20.3 | 22.5 | 20.9 | 36.5 |
| Other countries | 234,063 | 252,299 | 158,705 | 266,577 | 9.5 | 9.1 | 6.6 | 19.4 |
| Total | 2,474,460 | 2,806,046 | 2,417,950 | 1,372,316 | 100.0 | 100.0 | 100.0 | 100.0 |

TABLE 195.—*Destination of principal farm products exported from the United States, 1912–1915*—Continued.

| Article, and country to which consigned. | Quantity. | | | | Per cent of total. | | | |
|---|---|---|---|---|---|---|---|---|
| | Year ending June 30— | | | | | | | |
| | 1912 | 1913 | 1914 | 1915 (preliminary). | 1912 | 1913 | 1914 | 1915 (preliminary). |
| FOREST PRODUCTS—continued. | | | | | | | | |
| Naval stores—Con. | | | | | | | | |
| Turpentine, spirits of— | *Gallons.* | *Gallons.* | *Gallons.* | *Gallons.* | *Per ct.* | *Per ct.* | *Per ct.* | *Per ct.* |
| Belgium | 1,428,710 | 1,872,893 | 1,027,355 | 113,672 | 7.3 | 8.9 | 5.4 | 1.2 |
| British Oceania | 859,605 | 686,989 | 499,248 | 708,843 | 4.4 | 3.3 | 2.7 | 7.5 |
| Canada | 920.612 | 1,039,768 | 1,114,863 | 917,912 | 4.7 | 4.9 | 5.9 | 9.7 |
| Germany | 2,812,160 | 3,849,191 | 3,275,929 | 196,622 | 14.4 | 18.3 | 17.3 | 2.1 |
| Netherlands | 3,379,518 | 4,242,340 | 4,393,902 | 625,736 | 17.2 | 20.2 | 23.2 | 6.6 |
| United Kingdom | 7,865,713 | 7,432,271 | 7,109,851 | 5,338,724 | 40.1 | 35.3 | 37.6 | 56.4 |
| Other countries | 2,332,923 | 1,916,145 | 1,479,556 | 1,562,611 | 11.9 | 9.1 | 7.9 | 16.5 |
| Total | 19,599,241 | 21,039,597 | 18,900,704 | 9,464,120 | 100.0 | 100.0 | 100.0 | 100.00 |
| Wood: | | | | | | | | |
| Lumber— | | | | | | | | |
| Boards, deals, planks, joists, and scantling— | *M feet.* | *M feet.* | *M feet.* | *M feet.* | | | | |
| Argentina | 325,525 | 248,363 | 208,177 | 66,754 | 13.9 | 9.6 | 8.6 | 5.9 |
| Belgium | 64,970 | 78,662 | 62,772 | 8,793 | 2.8 | 3.1 | 2.6 | .8 |
| Brazil | 59,866 | 69,823 | 38,125 | 10,370 | 2.6 | 2.7 | 1.6 | .9 |
| British Oceania | 218,431 | 260,473 | 293,009 | 187,484 | 9.3 | 10.1 | 12.1 | 16.5 |
| Canada | 553,090 | 545,257 | 434,399 | 182,734 | 23.6 | 21.2 | 18.0 | 16.1 |
| Central American States and British Honduras | 52,483 | 56,509 | 81,251 | 45,787 | 2.2 | 2.2 | 3.4 | 4.0 |
| China | 33,668 | 88,749 | 107,115 | 56,238 | 1.4 | 3.4 | 4.4 | 5.0 |
| Cuba | 122,846 | 137,982 | 122,938 | 87,955 | 5.2 | 5.4 | 5.1 | 7.7 |
| France | 24,604 | 30,202 | 39,563 | 6,145 | 1.1 | 1.2 | 1.6 | .5 |
| Germany | 74,068 | 83,752 | 69,852 | 7,983 | 3.2 | 3.3 | 2.9 | .7 |
| Italy | 35,397 | 44,319 | 53,623 | 20,662 | 1.5 | 1.7 | 2.2 | 1.8 |
| Mexico | 106.574 | 121,657 | 69,111 | 31,296 | 4.6 | 4.7 | 2.9 | 2.8 |
| Netherlands | 102,012 | 125,201 | 120,661 | 17,218 | 4.4 | 4.9 | 5.0 | 1.5 |
| Philippine Islands | 24,222 | 15,747 | 22,485 | 6,623 | 1.0 | .6 | .9 | .6 |
| United Kingdom | 226,537 | 333,390 | 332,457 | 260,098 | 9.7 | 12.9 | 13.8 | 22.9 |
| Other countries | 316,616 | 336,147 | 361,901 | 139,072 | 13.5 | 13.0 | 14.9 | 12.3 |
| Total | 2,340,909 | 2,576,233 | 2.417,439 | 1,135,212 | 100.0 | 100.0 | 100.0 | 100.0 |
| Timber, hewn and sawed— | | | | | | | | |
| Canada | 53,462 | 39,705 | 37,846 | 15,382 | 12.2 | 7.8 | 8.6 | 8.9 |
| France | 20,132 | 39,950 | 32,047 | 6,192 | 4.6 | 7.8 | 7.3 | 3.6 |
| Germany | 25,211 | 32,023 | 17,506 | 2,337 | 5.8 | 6.3 | 4.0 | 1.3 |
| Italy | 51,260 | 44,726 | 65,314 | 25,763 | 11.7 | 8.7 | 14.8 | 14.8 |
| Netherlands | 64,327 | 60,692 | 57,776 | 6,733 | 14.7 | 11.9 | 13.1 | 3.9 |
| United Kingdom | 156,317 | 213,016 | 186,906 | 99,318 | 35.7 | 41.6 | 42.4 | 57.1 |
| Other countries | 67,312 | 81,525 | 43,771 | 18,064 | 15.3 | 15.9 | 9.8 | 10.4 |
| Total | 438,021 | 511,637 | 441,166 | 173,789 | 100.0 | 100.0 | 100.0 | 100.0 |

**Table 196.**—*Origin of principal farm products imported into the United States, 1912-1915.*

| Article, and country from which consigned. | Quantity. | | | | Per cent of total. | | | |
|---|---|---|---|---|---|---|---|---|
| | Year ending June 30 | | | | | | | |
| | 1912 | 1913 | 1914 | 1915 (preliminary). | 1912 | 1913 | 1914 | 1915 (preliminary). |
| ANIMAL MATTER. | | | | | | | | |
| Cattle: | *Number.* | *Number.* | *Number.* | *Number.* | *Per ct.* | *Per ct.* | *Per ct.* | *Per ct.* |
| Mexico | 315,227 | 391,477 | 625,253 | 343,809 | 99.0 | 92.8 | 72.0 | 63.9 |
| Other countries | 3,145 | 30,172 | 243,115 | 194,358 | 1.0 | 7.2 | 28.0 | 36.1 |
| Total | 318,372 | 421,649 | 868,368 | 538,167 | 100.0 | 100.0 | 100.0 | 100.0 |
| Horses: | | | | | | | | |
| Canada | 1,828 | 2,063 | 4,435 | 3,515 | 27.7 | 20.6 | 13.4 | 27.8 |
| France | 1,692 | 1,925 | 1,171 | 235 | 25.6 | 19.2 | 3.5 | 1.9 |
| Other countries | 3,087 | 6,020 | 27,413 | 8,902 | 46.7 | 60.2 | 83.1 | 70.3 |
| Total | 6,607 | 10,008 | 33,019 | 12,652 | 100.0 | 100.0 | 100.0 | 100.0 |
| Dairy products: | | | | | | | | |
| Cheese, including substitutes— | *Pounds.* | *Pounds.* | *Pounds* | *Pounds.* | | | | |
| France | 3,882,891 | 3,982,513 | 5,418,904 | 3,554,297 | 8.3 | 8.1 | 8.5 | 7.1 |
| Italy | 20,625,202 | 21,326,445 | 26,453,826 | 25,662,434 | 44.3 | 43.2 | 41.5 | 51.2 |
| Switzerland | 15,147,393 | 17,371,616 | 22,490,006 | 14,766,682 | 32.5 | 35.2 | 35.3 | 29.5 |
| Other countries | 6,886,521 | 6,707,370 | 9,421,577 | 6,155,107 | 14.9 | 13.5 | 14.7 | 12.2 |
| Total | 46,542,007 | 49,387,944 | 63,784,313 | 50,138,520 | 100.0 | 100.0 | 100.0 | 100.0 |
| Fibers, animal: | | | | | | | | |
| Silk, raw— | | | | | | | | |
| China | 4,776,506 | 5,510,607 | 5,926,745 | 5,097,169 | 22.1 | 21.2 | 20.7 | 19.6 |
| Italy | 2,058,456 | 2,811,606 | 1,997,428 | 2,610,570 | 9.5 | 10.8 | 7.0 | 10.0 |
| Japan | 14,493,131 | 17,425,353 | 20,196,212 | 18,217,083 | 67.1 | 66.9 | 70.6 | 70.0 |
| Other countries | 281,427 | 301,906 | 474,287 | 106,103 | 1.3 | 1.1 | 1.7 | .4 |
| Total | 21,609,520 | 26,049,472 | 28,594,672 | 26,030,925 | 100.0 | 100.0 | 100.0 | 100.0 |
| Wool, class 1— | | | | | | | | |
| Argentina | 21,450,715 | 22,603,402 | 30,959,660 | 65,373,017 | 30.1 | 33.6 | 24.8 | 29.4 |
| Australia, Commonwealth of | 12,971,908 | 5,619,342 | 23,757,714 | 66,063,841 | 18.2 | 8.4 | 19.0 | 29.8 |
| Belgium | 62,478 | 266,930 | 4,581,419 | 3,002,967 | .1 | .4 | 3.7 | 1.4 |
| New Zealand | 2,923,527 | 6,306,874 | 4,710,748 | 384,145 | 4.1 | 9.4 | 3.8 | .2 |
| United Kingdom | 30,928,128 | 29,368,707 | 45,223,714 | 38,897,503 | 4.34 | 43.7 | 36.2 | 17.5 |
| Uruguay | 2,666,702 | 2,657,620 | 7,972,159 | 14,584,962 | 3.7 | 4.0 | 6.4 | 6.6 |
| Other countries | 199,871 | 415,840 | 7,883,347 | 33,710,985 | .4 | .5 | 6.1 | 15.1 |
| Total | 71,203,329 | 67,238,715 | 125,088,761 | 222,017,420 | 100.0 | 100.0 | 100.0 | 100.0 |
| Wool, class 2— | | | | | | | | |
| Canada | 631,216 | 243,908 | 4,542,139 | 5,094,660 | 4.1 | 1.4 | 24.1 | 33.8 |
| United Kingdom | 11,772,512 | 13,505,151 | 12,301,661 | 8,607,638 | 75.7 | 80.0 | 65.3 | 57.2 |
| Other countries | 3,153,936 | 3,137,387 | 1,995,898 | 1,352,396 | 20.2 | 18.6 | 10.6 | 9.0 |
| Total | 15,557,664 | 16,886,446 | 18,839,698 | 15,054,694 | 100.0 | 100.0 | 100.0 | 100.0 |
| Wool, class 3— | | | | | | | | |
| Argentina | 4,429,123 | 2,337,196 | 5,452,526 | 10,509,249 | 4.2 | 2.1 | 5.3 | 16.0 |
| British East Indies | 4,440,606 | 3,962,811 | 2,788,130 | 859,121 | 4.2 | 3.6 | 2.7 | 1.3 |
| China | 32,060,405 | 35,926,815 | 29,884,054 | 35,455,392 | 30.1 | 32.3 | 29.3 | 54.0 |
| Russia (Asiatic and European) | 20,757,933 | 25,645,077 | 22,627 514 | 2,211,018 | 19.5 | 23.1 | 22.2 | 3.4 |
| Turkey (Asiatic) | 7,780,616 | 7,394,257 | 5,350,091 | 2,486,957 | 7.3 | 6.7 | 5.2 | 3.8 |
| United Kingdom | 23,122,561 | 20,900,746 | 22,105,267 | 10,233,744 | 21.7 | 18.8 | 21.7 | 15.6 |
| Other countries | 14,048,476 | 15,001,192 | 13,795,731 | 3,954,271 | 13.0 | 13.4 | 13.6 | 5.9 |
| Total | 106,639,720 | 111,168,094 | 102,003,313 | 65,709,752 | 100.0 | 100.0 | 100.0 | 100.0 |

TABLE 196.—*Origin of principal farm products imported into the United States, 1912–1915*—Continued.

| Article, and country from which consigned. | Quantity. | | | | Per cent of total. | | | |
|---|---|---|---|---|---|---|---|---|
| | Year ending June 30— | | | | | | | |
| | 1912 | 1913 | 1914 | 1915 (preliminary). | 1912 | 1913 | 1914 | 1915 (preliminary). |
| ANIMAL MATTER—continued. | | | | | | | | |
| Packing-house products: | | | | | | | | |
| Hides and skins, other than furs— | | | | | | | | |
| Calf skins— | *Pounds.* | *Pounds.* | *Pounds.* | *Pounds.* | *Per ct.* | *Per ct.* | *Per ct.* | *Per ct.* |
| Belgium | 4,222,034 | 4,724,643 | 5,157,640 | 978,751 | 4.0 | 5.0 | 6.3 | 2.1 |
| Canada | 6,192,704 | 5,930,010 | 5,734,207 | 4,441,310 | 5.9 | 6.3 | 7.0 | 9.7 |
| France | 5,134,402 | 4,991,209 | 5,800,673 | 7,406,904 | 4.9 | 5.3 | 7.0 | 16.1 |
| Germany | 21,886,652 | 16,916,203 | 16,560,316 | 2,613,289 | 20.8 | 17.9 | 20.1 | 5.7 |
| Netherlands | 8,582,182 | 8,142,510 | 12,006,926 | 4,152,980 | 8.2 | 8.6 | 14.6 | 9.0 |
| Russia (European) | 31,035,801 | 30,247,647 | 19,747,462 | 1,471,713 | 29.5 | 32.0 | 24.0 | 3.2 |
| Other countries | 28,198,714 | 23,606,823 | 17,396,366 | 24,901,754 | 26.7 | 24.9 | 21.0 | 54.2 |
| Total | 105,252,489 | 94,559,135 | 82,403,590 | 45,966,701 | 100.0 | 100.0 | 100.0 | 100.0 |
| Cattle hides— | | | | | | | | |
| Argentina | 83,662,262 | 67,041,938 | 79,787,332 | 113,366,344 | 33.3 | 25.0 | 28.5 | 33.9 |
| Belgium | 9,073,305 | 7,106,337 | 7,313,906 | 3,416,605 | 3.6 | 2.7 | 2.6 | 1.0 |
| Brazil | 714,256 | 1,743,956 | 3,259,873 | 23,223,310 | .3 | .7 | 1.2 | 6.9 |
| Canada | 29,769,745 | 41,608,176 | 46,588,543 | 33,453,572 | 11.9 | 15.5 | 16.6 | 10.0 |
| Colombia | 6,303,727 | 5,461,505 | 5,098,244 | 8,394,503 | 2.5 | 2.0 | 1.8 | 2.5 |
| Cuba | 4,366,121 | 2,840,141 | 5,528,502 | 15,260,111 | 1.7 | 1.1 | 2.0 | 4.6 |
| East Indies | 3,175,040 | 6,929,176 | 4,474,768 | 5,705,638 | 1.3 | 2.6 | 1.6 | 1.7 |
| France | 15,573,978 | 20,102,370 | 19,036,552 | 7,951,693 | 6.2 | 7.5 | 6.8 | 2.4 |
| Germany | 7,246,577 | 9,787,312 | 4,989,795 | 811,463 | 2.9 | 3.7 | 1.8 | 0.2 |
| Italy | 4,853,634 | 2,411,973 | 1,967,552 | 3,125,932 | 1.9 | .9 | .7 | 0.9 |
| Mexico | 28,103,124 | 29,500,427 | 33,194,289 | 43,378,992 | 11.2 | 11.0 | 11.9 | 13.0 |
| Netherlands | 6,580,433 | 7,270,864 | 4,099,899 | 2,870,004 | 2.6 | 2.7 | 1.5 | 0.9 |
| Russia (European) | 9,044,482 | 22,906,231 | 9,043,103 | 693,102 | 3.6 | 8.5 | 3.2 | 0.2 |
| United Kingdom | 9,262,242 | 8,588,600 | 11,204,957 | 6,455,342 | 3.7 | 3.2 | 4.0 | 1.9 |
| Uruguay | 10,933,642 | 7,244,806 | 13,403,443 | 21,809,611 | 4.4 | 2.7 | 4.8 | 6.5 |
| Venezuela | 5,555,809 | 4,470,501 | 5,149,308 | 7,033,582 | 2.2 | 1.7 | 1.8 | 2.1 |
| Other countries | 16,794,136 | 23,028,077 | 25,823,332 | 37,391,613 | 6.7 | 8.5 | 9.2 | 11.3 |
| Total | 251,012,513 | 268,042,390 | 279,963,488 | 334,341,417 | 100.0 | 100.0 | 100.0 | 100.0 |
| Goatskins— | | | | | | | | |
| Aden | 3,338,868 | 3,129,594 | 3,595,909 | 2,262,386 | 3.5 | 3.3 | 4.2 | 3.5 |
| Africa | 2,834,130 | 2,625,746 | 2,817,948 | 1,295,740 | 3.0 | 2.7 | 3.3 | 1.9 |
| Argentina | 5,323,163 | 4,276,365 | 3,470,013 | 3,738,020 | 5.6 | 4.4 | 4.1 | 5.6 |
| Brazil | 3,600,012 | 3,357,781 | 4,191,124 | 4,260,495 | 3.8 | 3.5 | 4.9 | 6.4 |
| China | 7,107,859 | 9,827,646 | 7,304,761 | 7,897,387 | 7.5 | 10.2 | 8.6 | 11.9 |
| East Indies | 41,069,568 | 41,594,938 | 35,831,857 | 28,651,497 | 43.1 | 43.2 | 42.3 | 43.1 |
| France | 2,489,532 | 2,406,371 | 2,171,224 | 1,891,445 | 2.6 | 2.5 | 2.6 | 2.8 |
| Mexico | 5,241,903 | 4,815,304 | 4,010,150 | 3,507,940 | 5.5 | 5.0 | 4.7 | 5.3 |
| Russia (European) | 7,299,991 | 7,183,542 | 5,131,075 | 1,556,154 | 7.7 | 7.5 | 6.1 | 2.3 |
| United Kingdom | 5,954,074 | 5,436,922 | 5,281,468 | 4,089,212 | 6.2 | 5.6 | 6.2 | 6.1 |
| Other countries | 11,081,603 | 11,596,096 | 10,953,899 | 7,396,887 | 11.5 | 12.1 | 13.0 | 11.1 |
| Total | 95,340,703 | 96,250,305 | 84,759,428 | 66,547,163 | 100.0 | 100.0 | 100.0 | 100.0 |
| Sheepskins— | | | | | | | | |
| Argentina | 5,566,064 | 6,848,065 | 3,874,944 | 8,692,846 | 9.2 | 9.5 | 5.5 | 14.8 |
| Brazil | 1,134,635 | 993,321 | 1,582,333 | 1,384,888 | 1.9 | 1.4 | 2.3 | 2.4 |
| British Oceania | 5,655,170 | 8,179,576 | 9,848,498 | 11,107,719 | 9.4 | 11.4 | 14.1 | 18.9 |
| Canada | 1,478,584 | 1,860,948 | 3,678,117 | 4,102,461 | 2.4 | 2.6 | 5.2 | 7.0 |
| France | 2,158,832 | 2,999,829 | 2,221,769 | 823,209 | 3.6 | 4.2 | 3.2 | 1.4 |
| Russia (European) | 7,148,565 | 8,484,377 | 9,158,287 | 826,898 | 11.8 | 11.8 | 13.1 | 1.4 |
| United Kingdom | 25,992,351 | 28,885,579 | 26,384,892 | 22,616,861 | 43.0 | 40.2 | 37.7 | 38.5 |
| Other countries | 11,266,108 | 13,533,024 | 13,327,985 | 9,264,636 | 18.7 | 18.9 | 18.9 | 15.6 |
| Total | 60,400,309 | 71,784,719 | 70,076,825 | 58,819,518 | 100.0 | 100.0 | 100.0 | 100.0 |

**TABLE 196.**—*Origin of principal farm products imported into the United States, 1912–1915*—Continued.

| Article, and country from which consigned. | Quantity. | | | | Per cent of total. | | | |
|---|---|---|---|---|---|---|---|---|
| | Year ending June 30— | | | | | | | |
| | 1912 | 1913 | 1914 | 1915 (preliminary). | 1912 | 1913 | 1914 | 1915 (preliminary). |
| VEGETABLE MATTER. | | | | | | | | |
| Cocoa, crude: | *Pounds.* | *Pounds.* | *Pounds.* | *Pounds.* | *Per ct.* | *Per ct.* | *Per ct.* | *Per ct.* |
| Brazil | 17,173,568 | 14,354,460 | 25,870,186 | 19,708,616 | 11.8 | 10.3 | 14.7 | 10.2 |
| British West Indies | 36,447,160 | 29,588,055 | 44,062,426 | 40,728,851 | 25.0 | 21.1 | 25.0 | 21.2 |
| Dominican Republic | 27,786,868 | 27,241s763 | 26,782,966 | 46,620,464 | 19.0 | 19.5 | 15.2 | 24.2 |
| Ecuador | 22,976,780 | 15,229,159 | 26,319,735 | 33,418,752 | 15.7 | 10.9 | 14.9 | 17.4 |
| Portugal | 18,954,405 | 23,040,617 | 17,738,638 | 3,516,655 | 13.0 | 16.5 | 10.1 | 1.8 |
| United Kingdom | 8,791,716 | 11,660,464 | 12,903,640 | 21,062,767 | 6.0 | 8.3 | 7.3 | 11.0 |
| Other countries | 13,838,448 | 18,924,654 | 22,590,055 | 27,250,529 | 9.5 | 13.4 | 12.8 | 14.2 |
| Total | 145,968,945 | 140,039,172 | 176,267,646 | 192,306,634 | 100.0 | 100.0 | 100.0 | 100.0 |
| Coffee: | | | | | | | | |
| Brazil | 632,527,267 | 639,262,011 | 743,113,500 | 773,400,315 | 71.5 | 74.1 | 74.2 | 69.1 |
| Central American States and British Honduras | 39,264,532 | 32,172,524 | 40,202,480 | 75,350,258 | 4.4 | 3.7 | 4.0 | 6.7 |
| Colombia | 62,912,252 | 89,684,514 | 91,830,513 | 111,077,449 | 7.1 | 10.4 | 9.2 | 9.9 |
| East Indies | 12,907,807 | 7,559,765 | 8,673,941 | 10,898,139 | 1.5 | .9 | .7 | 1.0 |
| Mexico | 34,156,025 | 26,121,439 | 49,385,504 | 52,706,120 | 3.9 | 3.0 | 4.9 | 4.7 |
| Netherlands | 1,941,746 | 1,956,676 | 5,811,934 | 1,583,672 | .2 | .2 | .6 | .1 |
| Venezuela | 47,109,521 | 49,671,060 | 49,953,478 | 72,463,140 | 5.3 | 5.8 | 5.0 | 6.5 |
| West Indies and Bermuda | 8,061,867 | 4,110,032 | 4,711,269 | 16,230,552 | .9 | .5 | .5 | 1.5 |
| Other countries | 46,320,230 | 12,596,736 | 7,845,698 | 4,980,879 | 5.2 | 1.4 | .9 | .5 |
| Total | 885,201,247 | 863,130,757 | 1,001,528,317 | 1,118,690,524 | 100.0 | 100.0 | 100.0 | 100.0 |
| Fibers, vegetable: | | | | | | | | |
| Cotton— | | | | | | | | |
| Egypt | 85,103,780 | 94,333,483 | 63,668,055 | 117,596,646 | 77.5 | 77.4 | 51.6 | 63.5 |
| Peru | 4,848,201 | 4,871,835 | 6,455,946 | 5,262,394 | 4.4 | 4.0 | 5.2 | 2.8 |
| United Kingdom | 10,356,921 | 8,354,253 | 2,557,041 | 3,866,732 | 9.4 | 6.9 | 2.1 | 2.1 |
| Other countries | 9,471,169 | 14,292,445 | 50,665,857 | 58,478,807 | 8.7 | 11.7 | 41.1 | 31.6 |
| Total | 109,780,071 | 121,852,016 | 123,346,899 | 185,204,579 | 100.0 | 100.0 | 100.0 | 100.0 |
| Flax— | *Long tons.* | *Long tons.* | *Long tons.* | *Long tons* | | | | |
| Belgium | 2,434 | 1,919 | 1,266 | 122 | 22.3 | 15.4 | 12.8 | 2.6 |
| Russia, European | 2,535 | 4,450 | 2,735 | 336 | 23.3 | 35.8 | 27.7 | 7.2 |
| United Kingdom | 4,251 | 4,464 | 5,076 | 3,749 | 39.0 | 35.9 | 51.4 | 79.9 |
| Other countries | 1,680 | 1,588 | 808 | 487 | 15.4 | 12.9 | 8.1 | 10.3 |
| Total | 10,900 | 12,421 | 9,885 | 4,694 | 100.0 | 100.0 | 100.0 | 100.0 |
| Jute and jute butts— | | | | | | | | |
| British East Indies | 99,100 | 120,511 | 100,755 | 80,444 | 98.1 | 96.1 | 95.0 | 96.8 |
| Other countries | 1,901 | 4,878 | 5,278 | 2,696 | 1.9 | 3.9 | 5.0 | 3.2 |
| Total | 101,001 | 125,389 | 106,033 | 83,140 | 100.0 | 100.0 | 100.0 | 100.0 |
| Manila fiber— | | | | | | | | |
| Philippine Islands | 66,923 | 69,629 | 49,285 | 50,587 | 97.6 | 94.3 | 99.2 | 99.0 |
| Other countries | 1,613 | 4,194 | 403 | 494 | 2.4 | 5.7 | .8 | 1.0 |
| Total | 68,536 | 73,823 | 49,688 | 51,081 | 100.0 | 100.0 | 100.0 | 100.0 |
| Sisal grass— | | | | | | | | |
| Mexico | 103,683 | 136,559 | 195,086 | 175,884 | 90.6 | 88.8 | 90.5 | 94.7 |
| Other countries | 10,784 | 17,310 | 20,461 | 9,880 | 9.4 | 11.2 | 9.5 | 5.3 |
| Total | 114,467 | 153,869 | 215,547 | 185,764 | 100.0 | 100.0 | 100.0 | 100.0 |

TABLE 196.—*Origin of principal farm products imported into the United States, 1912–1915*—Continued.

| Article, and country from which consigned. | Quantity. | | | | Per cent of total. | | | |
|---|---|---|---|---|---|---|---|---|
| | Year ending June 30— | | | | | | | |
| | 1912 | 1913 | 1914 | 1915 (preliminary). | 1912 | 1913 | 1914 | 1915 (preliminary). |
| VEGETABLE MATTER—contd. | | | | | | | | |
| Fruits: | | | | | | | | |
| Bananas— | *Bunches.* | *Bunches.* | *Bunches.* | *Bunches.* | *Per ct.* | *Per ct.* | *Per ct.* | *Per ct.* |
| British West Indies | 15,474,513 | 11,164,894 | 15,677,191 | 11,957,935 | 34.8 | 26.4 | 32.2 | 29.1 |
| Central American States and British Honduras | 23,631,604 | 25,108,590 | 25,432,760 | 22,470,600 | 53.1 | 59.3 | 52.1 | 54.7 |
| Cuba | 2,478,581 | 2,213,733 | 2,354,395 | 2,708,624 | 5.6 | 5.2 | 4.8 | 6.6 |
| South America | 1,804,536 | 2,869,247 | 2,271,866 | 1,567,461 | 4.1 | 6.8 | 4.7 | 3.8 |
| Other countries | 1,131,305 | 1,000,645 | 2,947,380 | 2,386,965 | 2.4 | 2.3 | 6.2 | 5.8 |
| Total | 44,520,539 | 42,357,109 | 48,683,592 | 41,091,585 | 100.0 | 100.0 | 100.0 | 100.0 |
| Nuts: | | | | | | | | |
| Walnuts— | *Pounds.* | *Pounds.* | *Pounds.* | *Pounds.* | | | | |
| Austria-Hungary | 771,003 | 4,409 | 514,455 | .............. | 2.1 | .0 | 1.4 | ....... |
| France | 24,145,579 | 20,379,294 | 19,020,143 | 18,716,938 | 64.9 | 76.4 | 51.1 | 56.0 |
| Italy | 5,143,873 | 3,315,483 | 6,275,717 | 6,440,934 | 13.8 | 12.4 | 16.9 | 19.3 |
| Turkey (Asiatic) | 718,915 | 424,418 | 1,712,209 | 15,844 | 1.9 | 1.6 | 4.6 | .0 |
| Other countries | 6,434,304 | 2,538,837 | 9,673,204 | 8,272,122 | 17.3 | 9.6 | 26.0 | 24.7 |
| Total | 37,213,674 | 26,662,441 | 37,195,728 | 33,445,838 | 100.0 | 100.0 | 100.0 | 100.0 |
| Oil, vegetable: | | | | | | | | |
| Olive, salad— | *Gallons.* | *Gallons.* | *Gallons.* | *Gallons.* | | | | |
| France | 809,629 | 932,536 | 949,858 | 802,092 | 16.7 | 17.9 | 15.3 | 11.9 |
| Italy | 3,245,863 | 3,584,945 | 4,319,567 | 4,864,388 | 67.1 | 68.7 | 69.5 | 72.5 |
| Other countries | 781,023 | 703,520 | 948,135 | 1,044,487 | 16.2 | 13.4 | 15.2 | 15.6 |
| Total | 4,836,515 | 5,221,001 | 6,217,560 | 6,710,967 | 100.0 | 100.0 | 100.0 | 100.0 |
| Soy-bean oil— | *Pounds.* | *Pounds.* | *Pounds.* | *Pounds.* | | | | |
| Japan | 13,357,373 | 7,979,144 | 6,425,306 | 5,471,911 | 47.7 | 64.7 | 39.3 | 28.5 |
| United Kingdom | 9,874,210 | 2,523,321 | 1,453,932 | 906,134 | 35.2 | 20.4 | 8.9 | 4.7 |
| Other countries | 4,789,699 | 1,837,720 | 8,481,214 | 12,828,476 | 17.1 | 14.9 | 51.8 | 66.8 |
| Total | 28,021,282 | 12,340,185 | 16,360,452 | 19,206,521 | 100.0 | 100.0 | 100.0 | 100.0 |
| Opium: | | | | | | | | |
| Turkey (Asiatic and European) | 274,712 | 420,406 | 383,489 | 440,529 | 68.7 | 82.7 | 83.2 | 91.0 |
| United Kingdom | 82,782 | 61,782 | 39,372 | 38,258 | 20.7 | 12.2 | 8.6 | 7.9 |
| Other countries | 42,343 | 26,245 | 32,339 | 5,240 | 10.6 | 5.1 | 8.2 | 1.1 |
| Total | 399,837 | 508,433 | 455,200 | 484,027 | 100.0 | 100.0 | 100.0 | 100.0 |
| Seeds: | | | | | | | | |
| Flaxseed or linseed— | *Bushels.* | *Bushels.* | *Bushels.* | *Bushels.* | | | | |
| Argentina | 1,210,628 | 429,254 | .............. | 3,927,542 | 17.7 | 8.1 | ....... | 36.8 |
| Belgium | 357,480 | 157 | 3 | .............. | 5.2 | .0 | .0 | ....... |
| British India | 1,525,310 | 128,981 | 50 | 39,990 | 22.3 | 2.4 | .0 | .4 |
| Canada | 3,510,883 | 4,732,316 | 8,647,168 | 6,629,860 | 51.3 | 89.4 | 99.9 | 62.2 |
| United Kingdom | 183,119 | 2,453 | 6,010 | .............. | 2.7 | .0 | .1 | ....... |
| Other countries | 54,386 | 1,135 | 4 | 68,823 | .8 | .1 | .0 | .6 |
| Total | 6,841,806 | 5,294,296 | 8,653,235 | 10,666,215 | 100.0 | 100.0 | 100.0 | 100.0 |
| Grass seed— | | | | | | | | |
| Clover— | *Pounds.* | *Pounds.* | *Pounds.* | *Pounds.* | | | | |
| Canada | 3,551,792 | 2,887,143 | 5,741,516 | 1,525,080 | 9.2 | 13.6 | 19.1 | 6.3 |
| France | 8,882,820 | 6,857,096 | 15,402,710 | 18,879,326 | 23.0 | 32.3 | 51.2 | 78.2 |
| Germany | 12,951,378 | 5,655,558 | 4,200,141 | 336,575 | 33.6 | 26.6 | 14.0 | 1.4 |
| Italy | 5,823,223 | 2,816,795 | 44,000 | 340,246 | 15.1 | 13.3 | .1 | 1.4 |
| Other countries | 7,341,924 | 3,007,965 | 4,719,282 | 3,075,484 | 19.1 | 14.2 | 15.6 | 12.7 |
| Total | 38,551,137 | 21,224,557 | 30,107,649 | 24,156,711 | 100.0 | 100.0 | 100.0 | 100.0 |

TABLE 196.—*Origin of principal farm products imported into the United States, 1912–1915*—Continued.

| Article, and country from which consigned. | Quantity. | | | | Per cent of total. | | | |
|---|---|---|---|---|---|---|---|---|
| | Year ending June 30— | | | | | | | |
| | 1912 | 1913 | 1914 | 1915 (preliminary). | 1912 | 1913 | 1914 | 1915 (preliminary). |
| VEGETABLE MATTER—contd. | | | | | | | | |
| Sugar, raw cane: | *Pounds.* | *Pounds.* | *Pounds.* | *Pounds.* | *Per ct.* | *Per ct.* | *Per ct.* | *Per ct.* |
| Cuba | 3,186,630,468 | 4,311,744,043 | 4,926,606,243 | 4,784,888,157 | 77.9 | 94.7 | 97.3 | 88.3 |
| Dutch East Indies | 340,396,410 | 12,759,756 | .............. | 22,235 | 8.3 | .3 | ....... | .0 |
| Philippine Islands | 435,570,122 | 203,160,972 | 116,749,211 | 326,842,296 | 10.6 | 4.5 | 2.3 | 6.0 |
| Santo Domingo | 17,681,938 | 2,670,630 | 4,316,282 | 86,188,211 | .4 | .1 | .1 | 1.6 |
| South America | 75,977,074 | 20,047,828 | 9,386,732 | 117,892,772 | 1.9 | .4 | .2 | 2.2 |
| Other countries | 35,873,706 | 3,666,643 | 4,506,153 | 102,796,811 | .9 | .0 | .1 | 1.9 |
| Total | 4,092,129,718 | 4,554,049,872 | 5,061,564,621 | 5,418,630 482 | 100.0 | 100.0 | 100.0 | 100.0 |
| Tea: | | | | | | | | |
| Canada | 2,558,583 | 3,024,508 | 3,112,383 | 3,446,615 | 2.5 | 3.2 | 3.4 | 3.6 |
| China | 17,605,670 | 23,728,418 | 20,139,342 | 23,100,548 | 17.4 | 25.0 | 22.1 | 23.8 |
| East Indies | 13,760,787 | 10,411,288 | 10,551,735 | 12,643,303 | 13.6 | 11.0 | 11.6 | 13.0 |
| Japan | 53,747,386 | 44,381,278 | 41,913,273 | 43,869,012 | 53.0 | 46.8 | 46.0 | 45.2 |
| United Kingdom | 12,887,949 | 12,238,114 | 14,077,601 | 12,869,968 | 12.7 | 12.9 | 15.4 | 13.3 |
| Other countries | 846,441 | 1,029,194 | 1,336,481 | 1,058,496 | .8 | 1.1 | 1.5 | 1.1 |
| Total | 101,406,816 | 94,812,800 | 91,130,815 | 96,987,942 | 100.0 | 100.0 | 100.0 | 100.0 |
| Tobacco, leaf: | | | | | | | | |
| Wrapper— | | | | | | | | |
| Netherlands | 6,290,499 | 6,193,042 | 5,846,504 | 7,061,943 | 97.2 | 96.8 | 96.0 | 97.5 |
| Other countries | 179,513 | 205,740 | 246,283 | 179,235 | 2.8 | 3.2 | 4.0 | 2.5 |
| Total | 6,470,012 | 6,398,782 | 6,092,787 | 7,241,178 | 100.0 | 100.0 | 100.0 | 100.0 |
| Other leaf— | | | | | | | | |
| Cuba | 22,744,032 | 27,553,759 | 26,617,545 | 21,987,848 | 48.9 | 45.1 | 49.3 | 57.1 |
| Germany | 518,078 | 1,659,390 | 456,445 | 91,578 | 1.1 | 2.7 | .8 | .2 |
| Turkey (Asiatic) | 11,233,546 | 18,955,295 | 15,616,543 | 6,714,654 | 24.1 | 31.0 | 28.9 | 17.4 |
| Turkey (European) | 10,371,907 | 10,816,048 | 8,502,742 | 5,950,915 | 22.3 | 17.7 | 15.7 | 15.4 |
| Other countries | 1,669,204 | 2,071,471 | 2,821,450 | 3,778,555 | 3.6 | 3.5 | 5.3 | 9.9 |
| Total | 46,536,767 | 61,055,963 | 54,014,725 | 38,523,550 | 100.0 | 100.0 | 100.0 | 100.0 |
| FOREST PRODUCTS. | | | | | | | | |
| India rubber, crude: | | | | | | | | |
| Belgium | 6,101,346 | 5,917,440 | 11,005,246 | 1,902,370 | 5.5 | 5.2 | 8.3 | 1.1 |
| Brazil | 46,762,744 | 43,518,861 | 40,641,305 | 48,753,670 | 42.4 | 38.4 | 30.8 | 28.3 |
| Central American States and British Honduras | 1,390,555 | 989,772 | 565,487 | 949,865 | 1.3 | .9 | .4 | .6 |
| East Indies | 6,338,130 | 12,255,500 | 16,597,105 | 27,898,683 | 5.8 | 10.8 | 12.6 | 16.2 |
| France | 4,139,109 | 2,968,232 | 2,629,287 | 685,699 | 3.8 | 2.6 | 2.0 | .4 |
| Germany | 8,820,516 | 7,790,742 | 7,079,260 | 739,105 | 8.0 | 6.9 | 5.4 | .4 |
| Mexico | 2,226,541 | 2,033,791 | 641,029 | 1,668,415 | 2.0 | 1.8 | .5 | 1.0 |
| Portugal | 1,449,790 | 873,249 | 556,560 | 4,130,624 | 1.3 | .8 | .4 | 2.4 |
| United Kingdom | 29,728,994 | 34,164,908 | 48,279,674 | 75,168,236 | 27.0 | 30.1 | 36.6 | 43.7 |
| Other countries | 3,252,448 | 2,871,864 | 4,000,789 | 10,171,761 | 2.9 | 2.5 | 3.0 | 5.9 |
| Total | 110,210,173 | 113,384,359 | 131,995,742 | 172,068,428 | 100.0 | 100.0 | 100.0 | 100.0 |
| Wood: | | | | | | | | |
| Cabinet woods, mahogany— | *M feet.* | *M feet.* | *M feet.* | *M feet.* | | | | |
| British Africa | 3,254 | 7,655 | 12,888 | 6,941 | 7.5 | 11.5 | 18.3 | 16.4 |
| Central American States and British Honduras | 12,732 | 13,526 | 23,356 | 17,954 | 29.5 | 20.4 | 33.1 | 42.4 |
| Mexico | 10,596 | 10,866 | 10,381 | 7,444 | 24.5 | 16.4 | 14.7 | 17.6 |
| United Kingdom | 10,428 | 20,866 | 18,289 | 6,593 | 24.1 | 31.5 | 26.0 | 15.6 |
| Other countries | 6,184 | 13,405 | 5,556 | 3,393 | 14.4 | 20.2 | 7.9 | 8.0 |
| Total | 43,194 | 66,318 | 70,470 | 42,325 | 100.0 | 100.0 | 100.0 | 100.0 |

TABLE 196.—*Origin of principal farm products imported into the United States, 1912–1915*—Continued.

| Article, and country from which consigned. | Quantity. | | | | Per cent of total. | | | |
|---|---|---|---|---|---|---|---|---|
| | Year ending June 30— | | | | | | | |
| | 1912 | 1913 | 1914 | 1915 (preliminary). | 1912 | 1913 | 1914 | 1915 (preliminary). |
| FOREST PRODUCTS—continued. | | | | | | | | |
| Wood—Continued. | | | | | | | | |
| Boards, planks, deals, and other sawed lumber— | *M feet.* | *M feet.* | *M feet.* | *M feet.* | *Per ct.* | *Per ct.* | *Per ct.* | *Per ct.* |
| Canada | 870,323 | 1,021,810 | 892,833 | 908,663 | 96.2 | 93.7 | 96.1 | 96.7 |
| Other countries | 34,829 | 68,818 | 36,040 | 30,659 | 3.8 | 6.3 | 3.9 | 3.3 |
| Total | 905,152 | 1,090,628 | 928,873 | 939,322 | 100.0 | 100.0 | 100.0 | 100.0 |
| Wood pulp: | *Pounds.* | *Pounds.* | *Pounds.* | *Pounds.* | | | | |
| Canada | 468,870,801 | 463,877,981 | 524,251,441 | 660,656,640 | 43.8 | 41.2 | 46.0 | 50.2 |
| Germany | 147,030,609 | 151,481,033 | 149,171,214 | 83,119,680 | 13.7 | 13.4 | 13.1 | 6.3 |
| Norway | 166,097,531 | 189,951,459 | 181,255,024 | 200,934,720 | 15.5 | 16.9 | 15.9 | 15.3 |
| Sweden | 238,613,758 | 283,916,347 | 265,457,874 | 350,183,680 | 22.3 | 25.2 | 23.3 | 26.6 |
| Other countries | 49,005,759 | 37,298,387 | 18,591,642 | 22,050,560 | 4.7 | 3.3 | 1.7 | 1.6 |
| Total | 1,069,618,458 | 1,126,525,207 | 1,138,727,195 | 1,316,945,280 | 100.0 | 100.0 | 100.0 | 100.0 |

TABLE 197.—*Rural and agricultural population in various countries.*

| Country. | Rural population. | | | Population dependent upon agriculture. | | |
|---|---|---|---|---|---|---|
| | Year. | Number. | Per cent of total population. | Year. | Number. | Per cent of total population. |
| United States | 1910 | 49,348,883 | 53.7 | | | |
| Austria-Hungary: | | | | | | |
| Austria | | | | 1900 | 13,447,362 | 51.4 |
| Hungary | | | | 1900 | 13,061,118 | 67.8 |
| Total Austria-Hungary | | | | 1900 | 26,508,480 | 58.4 |
| Belgium | 1910 | 1,654,277 | 22.3 | | | |
| British India | | | | 1901 | 191,691,731 | 65.1 |
| Bulgaria | | | | 1905 | 3,089,301 | 76.6 |
| Denmark | 1911 | 1,647,350 | 59.7 | 1911 | 1,023,962 | 37.1 |
| Finland | | | | 1900 | 1,555,357 | 57.3 |
| France | 1906 | 22,715,011 | 57.9 | 1891 | 17,435,888 | 45.7 |
| Germany | | | | 1907 | 17,089,496 | 27.7 |
| Norway | | | | 1900 | 854,787 | 38.5 |
| Portugal | 1890 | 3,458,996 | 68.5 | 1900 | 3,367,199 | 62.1 |
| Roumania | 1900 | 4,836,904 | 81.2 | | | |
| Russia: | | | | | | |
| Caucasus | | | | 1897 | 7,266,428 | 78.2 |
| Central Asia | | | | 1897 | 6,361,466 | 82.1 |
| Poland | | | | 1897 | 5,302,850 | 56.4 |
| Russia proper | | | | 1897 | 69,470,360 | 74.3 |
| Siberia | | | | 1897 | 4,448,456 | 77.2 |
| Total Russia | | | | 1897 | 92,849,560 | 73.9 |
| Serbia | | | | 1900 | 2,097,988 | 84.2 |
| Sweden | | | | 1900 | 2,344,612 | 45.6 |
| Switzerland | 1900 | 1,047,795 | 31.6 | 1900 | 1,067,905 | 32.2 |
| United Kingdom: | | | | | | |
| England and Wales | 1911 | 7,907,556 | 21.9 | | | |

TABLE 198.—*Number of persons engaged in agriculture in various countries.*

| Country. | Year. | Males. | | Females. | | Total persons engaged in agriculture. | |
|---|---|---|---|---|---|---|---|
| | | Number. | Per cent of males in all occupations. | Number. | Per cent of females in all occupations. | Number. | Per cent of persons in all occupations. |
| United States | 1910 | 10,582,039 | 35.2 | 1,806,584 | 22.4 | 12,388,623 | 32.5 |
| Algeria | 1881 | 636,078 | 74.8 | 91,602 | 53.7 | 727,680 | 71.3 |
| Argentina | 1895 | 318,149 | 28.0 | 67,174 | 13.4 | 385,323 | 23.6 |
| Australia | 1901 | 377,626 | 29.5 | 39,029 | 11.1 | 416,655 | 25.6 |
| Austria-Hungary | 1900 | 8,185,250 | 58.5 | 5,935,805 | 70.3 | 14,121,055 | 63.0 |
| Belgium | 1900 | 533,665 | 23.6 | 163,707 | 17.6 | 697,372 | 21.9 |
| Bolivia | 1900 | ........ | ........ | ........ | ........ | 561,009 | 43.5 |
| British India | 1901 | 63,026,365 | 67.3 | 27,867,210 | 66.5 | 90,893,575 | 67.1 |
| British North Borneo | 1901 | ........ | ........ | ........ | ........ | 32,892 | 64.2 |
| Bulgaria | 1905 | 895,206 | 73.3 | 837,406 | 94.9 | 1,732,612 | 82.4 |
| Canada | 1901 | 707,997 | 45.4 | 8,940 | 3.7 | 716,937 | 39.9 |
| Ceylon | 1901 | 745,074 | 65.0 | 318,551 | 65.4 | 1,063,625 | 65.1 |
| Chile | 1907 | 448,546 | 50.3 | 21,877 | 6.2 | 470,423 | 37.7 |
| Cuba | 1907 | 364,821 | 52.2 | 3,110 | 4.2 | 367,921 | 47.6 |
| Cyprus | 1901 | 33,611 | 62.8 | 2,757 | 20.8 | 36,368 | 54.5 |
| Denmark | 1911 | 386,016 | 45.7 | 110,169 | 28.5 | 496,185 | 40.3 |
| Egypt | 1907 | 2,258,005 | 67.2 | 57,144 | 33.3 | 2,315,149 | 65.6 |
| Federated Malay States | 1901 | 115,027 | 28.2 | 52,324 | 82.7 | 167,351 | 35.5 |
| Finland | 1900 | 321,538 | 51.4 | 102,008 | 39.6 | 423,546 | 48.0 |
| Formosa | 1905 | 763,456 | 70.6 | 263,664 | 82.4 | 1,027,120 | 73.3 |
| France | 1906 | 5,452,392 | 41.9 | 3,324,661 | 43.2 | 8,777,053 | 42.4 |
| Germany | 1907 | 5,146,723 | 27.7 | 4,585,749 | 48.3 | 9.732,472 | 34.6 |
| Greece | 1907 | 321,120 | 47.3 | 6,972 | 12.2 | 328,092 | 44.6 |
| Grenada | 1901 | 8,816 | 57.1 | 7,722 | 49.7 | 16,538 | 53.4 |
| Italy | 1901 | 6,370,277 | 57.9 | 3,196,063 | 60.5 | 9,566,340 | 58.8 |
| Jamaica | 1911 | ........ | ........ | ........ | ........ | 271,493 | 66.1 |
| Malta and Gozo | 1901 | 10,235 | 13.3 | 3,613 | 15.8 | 13,848 | 13.9 |
| Mauritius | 1901 | 72,493 | 57.1 | 5,989 | 38.0 | 78,482 | 55.0 |
| Netherlands | 1899 | 490,694 | 32.9 | 79,584 | 18.4 | 570,278 | 29.6 |
| New Zealand | 1911 | 103,644 | 28.5 | 7,472 | 8.3 | 111,116 | 24.5 |
| Norway | 1910 | ........ | ........ | ........ | ........ | 307,528 | 33.4 |
| Philippine Islands | 1903 | 1,163,777 | 57.8 | 90,286 | 8.8 | 1,254,063 | 41.3 |
| Porto Rico | 1899 | 196,893 | 73.3 | 1,868 | 3.9 | 198,761 | 62.8 |
| Portugal | 1900 | 1,127,268 | 65.3 | 380,293 | 52.0 | 1,507,561 | 61.4 |
| Russia: | | | | | | | |
| In Europe | 1897 | 13,808,505 | 59.6 | 1,974,164 | 38.0 | 15,782,669 | 55.6 |
| In Asia | 1897 | 2,092,965 | 69.2 | 105,137 | 30.5 | 2,198,102 | 65.3 |
| Total | 1897 | 15,901,470 | 60.7 | 2,079,301 | 37.5 | 17,980,771 | 56.7 |
| St. Lucia | 1901 | ........ | ........ | ........ | ........ | 15,796 | 54.1 |
| Serbia | 1900 | 311,700 | 65.5 | 13,524 | 50.5 | 325,224 | 64.7 |
| Sierra Leone | 1901 | 8,705 | 28.7 | 4,544 | 21.7 | 13,249 | 25.9 |
| Spain | 1900 | 3,741,730 | 58.1 | 775,270 | 51.8 | 4,517,000 | 56.9 |
| Sweden | 1900 | 761,016 | 52.4 | 333,264 | 53.8 | 1,094,280 | 52.8 |
| Switzerland | 1900 | 392,971 | 37.1 | 80,326 | 16.1 | 473,297 | 30.4 |
| Trinidad and Tabago | 1901 | 51,744 | 54.7 | 25,765 | 39.3 | 77,509 | 48.4 |
| Union of South Africa | 1904 | 863,223 | 56.3 | 847,057 | 77.5 | 1,710,280 | 65.1 |
| United Kingdom | 1901 | 2,109,812 | 16.3 | 152,642 | 2.9 | 2,262,454 | 12.4 |

### TABLE 199.—*Total area and agricultural land in various countries.*

[As classified and reported by the International Institute of Agriculture.]

| Country. | Year. | Total area. | Productive land.[1] |  | Cultivated land.[2] |  |
|---|---|---|---|---|---|---|
|  |  |  | Amount. | Per cent of total area. | Amount. | Per cent of total area. |
| NORTH AMERICA. |  | *Acres.* | *Acres.* | *Per cent.* | *Acres.* | *Per cent.* |
| United States | 1910 | 1,903,269,000 | 878,789,000 | 46.2 | 293,794,000 | 15.4 |
| Canada | 1901 | 2,397,082,000 | 63,420,000 | 2.6 | 19,880,000 | .8 |
| Costa Rica | 1909-10 | 13,348,000 | 3,090,000 | 23.2 | 442,000 | 3.3 |
| Cuba | 1899 | 28,299,000 | 8,717,000 | 30.8 | 778,000 | 2.7 |
| SOUTH AMERICA. |  |  |  |  |  |  |
| Argentina | 1909-10 | 729,575,000 | 537,805,000 | 73.7 | 44,446,000 | 6.1 |
| Chile[3] | 1910-11 | 187,145,000 | 15,144,000 | 8.1 | 2,557,000 | 1.4 |
| Uruguay | 1908 | 46,189,000 | 40,875,000 | 88.5 | 1,962,000 | 4.2 |
| EUROPE. |  |  |  |  |  |  |
| Austria-Hungary: |  |  |  |  |  |  |
| Austria | 1911 | 74,132,000 | 69,939,000 | 94.3 | 26,272,000 | 35.4 |
| Hungary | 1910 | 80,272,000 | 77,225,000 | 96.2 | 35,178,000 | 43.8 |
| Total Austria-Hungary | .......... | 154,404,000 | 147,164,000 | 95.3 | 61,450,000 | 39.8 |
| Belgium | 1895 | 7,278,000 | 6,443,000 | 88.5 | 3,582,000 | 49.2 |
| Bulgaria | 1910 | 23,807,000 | 18,959,000 | 79.6 | 8,574,000 | 36 |
| Denmark | 1907 | 9,629,000 | 9,078,000 | 94.3 | 6,376,000 | 66.2 |
| Finland | 1901 | 82,113,000 | .............. | .......... | 3,875,000 | 4.7 |
| France | 1910 | 130,854,000 | 123,642,000 | 94.5 | 59,124,000 | 45.2 |
| Germany | 1900 | 133,594,000 | 126,401,000 | 94.6 | 63,689,000 | 47.7 |
| Italy | 1911 | 70,839,000 | 65,164,000 | 92 | 33,815,000 | 47.7 |
| Luxemburg | 1911 | 639,000 | 616,000 | 96.4 | 300,000 | 46.9 |
| Netherlands | 1911 | 8,057,000 | 7,258,000 | 90.1 | 2,210,000 | 27.4 |
| Norway | 1907 | 79,810,000 | 22,942,000 | 28.7 | 1,830,000 | 2.3 |
| Portugal | 1912 | 22,018,000 | 17,281,000 | 78.5 | 5,777,000 | 26.2 |
| Roumania | 1905 | 32,167,000 | 24,645,000 | 76.6 | 14,829,000 | 46.1 |
| Russia, European | 1911 | 1,278,203,000 | 698,902,000 | 54.7 | 245,755,000 | 19.2 |
| Serbia | 1897 | 11,936,000 | 6,246,000 | 52.3 | 2,534,000 | 21.2 |
| Spain | 1908-11 | 124,666,000 | 112,665,000 | 90.4 | 41,264,000 | 33.1 |
| Sweden | 1911 | 110,667,000 | 65,196,000 | 58.9 | 9,144,000 | 8.3 |
| Switzerland[4] | 1905 | 10,211,000 | 7,635,000 | 74.8 | 605,000 | 5.9 |
| United Kingdom: |  |  |  |  |  |  |
| Great Britain | 1911 | 56,802,000 | 47,737,000 | 84 | 14,587,000 | 25.7 |
| Ireland | 1911 | 20,350,000 | 18,789,000 | 92.3 | 3,275,000 | 16.1 |
| Total United Kingdom | .......... | 77,152,000 | 66,526,000 | 86.2 | 17,862,000 | 23.2 |
| ASIA. |  |  |  |  |  |  |
| British India | 1910-11 | 615,695,000 | 465,706,000 | 75.6 | 264,858,000 | 43 |
| Formosa | 1911 | 8,858,000 | 1,972,000 | 22.3 | 1,884,000 | 21.3 |
| Japan | 1911 | 94,495,000 | 74,180,000 | 78.5 | 17,639,000 | 18.7 |
| Russia, Asiatic | 1911 | 4,028,001,000 | 715,838,000 | 17.8 | 33,860,000 | .8 |
| AFRICA. |  |  |  |  |  |  |
| Algeria | 1910 | 124,976,000 | 50,846,000 | 40.7 | 11,434,000 | 9.1 |
| Egypt | 1912 | 222,390,000 | 5,486,000 | 2.5 | 5,457,000 | 2.5 |
| Tunis | 1912 | 30,888,000 | 22,239,000 | 72 | 6,919,000 | 22.4 |
| Union of South Africa | 1909-10 | 302,827,000 | 3,569,000 | 1.2 | 3,385,000 | 1.1 |
| OCEANIA. |  |  |  |  |  |  |
| Australia | 1910-11 | 1,903,661,000 | 119,942,000 | 6.3 | 14,987,000 | .8 |
| New Zealand | 1910 | 66,469,000 | 57,310,000 | 86.2 | 6,955,000 | 10.5 |
| Total, 36 countries | .......... | 15,071,209,000 | 4,591,691,000 | 30.5 | 1,313,832,000 | 8.7 |

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[1] Includes besides cultivated land, also natural meadows and pastures, forests, woodlots, and lands devoted to cultivated trees and shrubs.

[2] Includes fallow lands: also artificial grass lands.

[3] The figure for "productive land" in Chile excludes marshes, heaths, and productive but uncared-for lands.

[4] The figure for "cultivated land" in Switzerland excludes artificial meadows and pastures.

## NATIONAL FORESTS.

TABLE 200.—*National forests: Timber disposed of, quantity, price, and number of users, revenue under specified heads, and details of grazing privileges, years ended June 30, 1910 to 1915.*

[Reported by the Forest Service.]

| Item. | Year ended June 30— | | | | | |
|---|---|---|---|---|---|---|
| | 1910 | 1911 | 1912 | 1913 | 1914 | 1915 |
| **Free timber given:** | | | | | | |
| Number of users | 35,364 | 40,660 | 38,749 | 38,264 | 39,466 | 40,040 |
| Timber cut ... M ft. | 104,796 | 123,488 | 123,233 | 121,750 | 120,575 | 123,259 |
| Value ... dolls. | 176,167 | 196,930 | 196,335 | 191,825 | 183,223 | 206,597 |
| **Timber sales:** | | | | | | |
| Number | 5,398 | 5,653 | 5,772 | 6,182 | 8,303 | 10,905 |
| Quantity ... M ft. | 574,555 | 830,304 | 799,417 | 2,137,311 | 1,540,084 | 1,093,589 |
| Price per thousand board feet (average) ... dolls. | 2.44 | 2.56 | 2.00 | 2.01 | 2.30 | 2.44 |
| Kinds of stock: | | | | | | |
| Cattle ... No. | 1,409,873 | 1,351,922 | 1,403,025 | 1,455,922 | 1,508,639 | 1,627,321 |
| Goats ... No. | 90,300 | 77,668 | 83,849 | 76,898 | 58,616 | 51,409 |
| Hogs ... No. | 3,145 | 4,500 | 4,330 | 3,277 | 3,381 | 2,792 |
| Horses ... No. | 84,552 | 91,516 | 95,343 | 97,919 | 108,241 | 96,933 |
| Sheep ... No. | 7,558,650 | 7,371,747 | 7,467,890 | 7,790,953 | 7,560,186 | 7,232,276 |
| Total ... No. | 9,146,520 | 8,897,353 | 9,054,437 | 9,424,969 | 9,239,063 | 9,010,731 |
| **Revenue:** | | | | | | |
| From— | | | | | | |
| Timber sales ... dolls. | 940,090 | 935,128 | 994,314 | 1,282,647 | 1,243,195 | 1,244,985 |
| Timber settlements,[1] dollars | 67,562 | 22,035 | 33,287 | 36,105 | 39,927 | 3,181 |
| Penalties for timber trespass ... dolls. | 35,142 | 43,236 | 40,291 | 17,558 | 12,981 | 7,284 |
| Turpentine sales,[2] dollars | ........ | ........ | ........ | ........ | 15,372 | 8,915 |
| Fire trespass ... dolls. | 634 | 14,371 | 21,810 | 5,028 | 7,950 | 661 |
| Special uses[3] ... dolls. | 59,811 | 76,646 | 48,249 | 67,278 | 68,773 | 78,921 |
| Grazing fees ... dolls. | 978,956 | 930,966 | 962,175 | 1,001,156 | 997,583 | 1,130,175 |
| Grazing trespass, dollars | 7,953 | 4,524 | 6,667 | 6,583 | 4,765 | 5,818 |
| Water power ... dolls. | ........ | ........ | 50,563 | 51,235 | 47,164 | 89,104 |
| Total revenue ... dolls. | 2,090,148 | 2,026,906 | 2,157,356 | 2,467,590 | 2,437,710 | [4] 2,569,044 |

[1] Includes timber taken in the exercise of permits for rights of way, development of power, etc.
[2] Prior to 1914 receipts from sale of turpentine were included with timber sales.
[3] Included under "Special use" prior to 1912.
[4] Refunds during year, $54,575.

TABLE 201.—*Area of national forest lands, June 30, 1915.*

[Reported by Forest Service.]

| State and forest. | Net area. | State and forest. | Net area. |
|---|---|---|---|
| **Alaska:** | *Acres.* | **Arkansas:** | *Acres.* |
| Chugach | 11,170,929 | Arkansas | 680,430 |
| Tongass | 15,455,694 | Ozark | 488,949 |
| Total | 26,626,623 | Total | 1,169,379 |
| **Arizona:** | | **California:** | |
| Apache | 1,186,848 | Angeles | 887,964 |
| Chiricahua[1] | 348,971 | California | 822,137 |
| Coconino | 1,601,523 | Cleveland | 883,041 |
| Coronado | 962,690 | Crater[1] | 51,283 |
| Crook | 867,286 | Eldorado[1] | 549,350 |
| Dixie[1] | 605,646 | Inyo[1] | 1,252,288 |
| Kaibab | 1,072,411 | Kern | 1,268,697 |
| Manzano[1] | 27,708 | Klamath[1] | 1,471,017 |
| Prescott | 1,341,763 | Lassen | 1,018,142 |
| Sitgreaves | 667,408 | Modoc | 1,182,817 |
| Tonto | 1,998,144 | Mono[1] | 801,514 |
| Tusayan | 1,607,727 | Monterey | 438,765 |
| | | Plumas | 1,147,556 |
| Total | 12,288,125 | Santa Barbara | 1,698,008 |
| | | Sequoia | 926,255 |

[1] For total area, see "National Forests extending into two States."

TABLE 201.—*Area of national forest lands, June 30, 1915*—Continued.

| State and forest. | Net area. |
|---|---|
| California—Continued. | *Acres.* |
| Shasta | 828,205 |
| Sierra | 1,495,066 |
| Siskiyou [1] | 349,772 |
| Stanislaus | 822,269 |
| Tahoe [1] | 546,630 |
| Trinity | 1,430,446 |
| Total | 19,866,203 |
| Colorado: | |
| Arapaho | 636,980 |
| Battlement | 653,199 |
| Cochetopa | 902,924 |
| Colorado | 495,826 |
| Durango | 615,221 |
| Gunnison | 908,658 |
| Hayden [1] | 66,318 |
| Holy Cross | 577,634 |
| La Sal [1] | 27,444 |
| Leadville | 935,566 |
| Montezuma | 699,523 |
| Pike | 1,143,772 |
| Rio Grande | 1,145,632 |
| Routt | 852,339 |
| San Isabel | 598,964 |
| San Juan | 610,733 |
| Sopris | 596,900 |
| Uncompahgre | 791,173 |
| White River | 848,875 |
| Total | 13,107,681 |
| Florida: | |
| Florida | 299,166 |
| Idaho: | |
| Boise | 1,046,438 |
| Cache [1] | 262,636 |
| Caribou [1] | 689,413 |
| Challis | 1,261,052 |
| Clearwater | 849,471 |
| Coeur d'Alene | 616,822 |
| Idaho | 1,193,392 |
| Kaniksu [1] | 199,480 |
| Lemhi | 1,067,146 |
| Minidoka [1] | 515,491 |
| Nez Perce | 1,693,858 |
| Palisade [1] | 296,964 |
| Payette | 832,047 |
| Pend Oreille | 666,356 |
| Pocatello [1] | 251,681 |
| St. Joe | 643,611 |
| Salmon | 1,622,925 |
| Sawtooth | 1,203,806 |
| Selway | 1,694,603 |
| Targhee [1] | 697,974 |
| Weiser | 563,640 |
| Total | 17,868,826 |
| Kansas: | |
| Kansas | 139,049 |
| Michigan: | |
| Marquette | 20,517 |
| Michigan | 62,640 |
| Total | 83,157 |
| Minnesota: | |
| Minnesota | 173,517 |
| Superior | 813,860 |
| Total | 987,377 |
| Montana: | |
| Absaroka | 843,675 |
| Beartooth | 663,844 |
| Beaverhead | 1,338,641 |
| Bitterroot | 1,047,013 |
| Blackfeet | 856,743 |
| Cabinet | 846,790 |
| Montana—Continued. | *Acres.* |
| Custer | 436,967 |
| Deerlodge | 835,966 |
| Flathead | 1,812,104 |
| Gallatin | 565,554 |
| Helena | 669,985 |
| Jefferson | 1,045,269 |
| Kootenai | 1,344,711 |
| Lewis and Clark | 817,411 |
| Lolo | 882,316 |
| Madison | 999,313 |
| Missoula | 996,254 |
| Sioux [1] | 102,138 |
| Total | 16,104,734 |
| Nebraska: | |
| Nebraska | 198,056 |
| Nevada: | |
| Eldorado [1] | 400 |
| Humboldt | 692,573 |
| Inyo [1] | 72,942 |
| Moapa | 282,543 |
| Mono [1] | 464,254 |
| Nevada | 1,238,455 |
| Ruby | 343,627 |
| Santa Rosa | 270,246 |
| Tahoe | 14,687 |
| Toiyabe | 1,907,983 |
| Total | 5,287,710 |
| New Mexico: | |
| Alamo | 667,743 |
| Carson | 876,959 |
| Chiricahua [1] | 127,393 |
| Datil | 2,690,365 |
| Gila | 1,438,028 |
| Jemez | 723,170 |
| Lincoln | 553,047 |
| Manzano [1] | 758,766 |
| Pecos | 634,040 |
| Total | 8,469,511 |
| North Dakota: | |
| Dakota | 6,414 |
| Oklahoma: | |
| Wichita | 61,480 |
| Oregon: | |
| Cascade | 1,019,505 |
| Crater | 753,403 |
| Deschutes | 804,748 |
| Fremont | 777,202 |
| Klamath [1] | 4,006 |
| Malheur | 1,057,682 |
| Minam | 399,025 |
| Ochoco | 716,902 |
| Oregon | 1,030,765 |
| Paulina | 806,760 |
| Santiam | 594,292 |
| Siskiyou [1] | 999,902 |
| Siuslaw | 529,705 |
| Umatilla | 499,098 |
| Umpqua | 969,558 |
| Wallowa | 904,314 |
| Wenaha [1] | 425,444 |
| Whitman | 877,596 |
| Total | 13,259,992 |
| Porto Rico: | |
| Luquillo | 32,975 |
| South Dakota: | |
| Black Hills | 485,380 |
| Harney | 565,269 |
| Sioux [1] | 78,559 |
| Total | 1,129,208 |

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[1] For total area, see "National Forests extending into two States."

TABLE 201.—*Area of national forest lands, June 30, 1915*—Continued.

| State and forest. | Net area. |
|---|---|
| **Utah:** | *Acres.* |
| Ashley[1] | 982,643 |
| Cache[1] | 260,741 |
| Dixie[1] | 433,415 |
| Fillmore | 701,322 |
| Fishlake | 661,783 |
| La Sal[1] | 521,080 |
| Manti | 723,294 |
| Minidoka[1] | 69,733 |
| Nebo | 57,840 |
| Pocatello[1] | 6,325 |
| Powell | 690,469 |
| Sevier | 731,830 |
| Uinta | 995,757 |
| Wasatch | 612,928 |
| Total | 7,449,160 |
| **Washington:** | |
| Chelan | 687,183 |
| Columbia | 770,293 |
| Colville | 750,223 |
| Kaniksu[1] | 259,173 |
| Okanogan | 1,492,491 |
| Olympic | 1,536,079 |
| Rainer | 1,310,405 |
| Snoqualmie | 724,303 |
| **Washington—Continued.** | *Acres.* |
| Washington | 1,453,853 |
| Wenaha[1] | 311,519 |
| Wenatchee | 657,644 |
| Total | 9,953,166 |
| **Wyoming:** | |
| Ashley[1] | 5,987 |
| Bighorn | 1,123,585 |
| Bonneville | 607,173 |
| Bridger | 570,992 |
| Caribou[1] | 6,707 |
| Hayden[1] | 323,915 |
| Medicine Bow | 469,786 |
| Palisade[1] | 254,928 |
| Shosbone | 1,577,591 |
| Sundance | 144,922 |
| Targhee | 84,970 |
| Teton | 1,927,183 |
| Washakie | 387,569 |
| Wyoming | 899,980 |
| Total | 8,385,288 |
| Grand total, National Forests | 162,773,280 |

NATIONAL FORESTS EXTENDING INTO TWO STATES.

| Forest. | States. | Net area. |
|---|---|---|
| | | *Acres.* |
| Chiricahua | Arizona-New Mexico | 476,369 |
| Dixie | Arizona-Utah | 1,039,061 |
| Manzano | Arizona-New Mexico | 786,474 |
| Crater | California-Oregon | 804,666 |
| Eldorado | California-Nevada | 549,750 |
| Inyo | California-Nevada | 1,325,230 |
| Klamath | California-Oregon | 1,475,023 |
| Mono | California-Nevada | 1,265,768 |
| Siskiyou | California-Oregon | 1,349,764 |
| Tahoe | California-Nevada | 561,317 |
| Hayden | Colorado-Wyoming | 890,233 |
| La Sal | Colorado-Utah | 548,524 |
| Cache | Idaho-Utah | 523,377 |
| Caribou | Idaho-Wyoming | 696,120 |
| Kaniksu | Idaho-Washington | 458,653 |
| Minidoka | Idaho-Utah | 585,224 |
| Palisade | Idaho-Wyoming | 551,912 |
| Pocatello | Idaho-Utah | 258,006 |
| Targhee | Idaho-Wyoming | 782,944 |
| Sioux | Montana-South Dakota | 180,697 |
| Wenaha | Oregon-Washington | 736,963 |
| Ashley | Utah-Wyoming | 988,630 |

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[1] For total area, see "National Forests extending into two States."

### TABLE 202.—*Grazing allowances for national forests, 1915.*

[Reported by the Forest Service.]

| Forest. | Number of stock authorized. | | | Yearlong rates (cents). | | | |
|---|---|---|---|---|---|---|---|
| | Cattle and horses. | Swine. | Sheep and goats. | Cattle. | Horses. | Swine. | Sheep and goats. |
| District 1: | | | | | | | |
| Absaroka | + 6,400 | | − 102,000 | 54 | 67 | | 13.5 |
| Beartooth | + 4,030 | | − 51,150 | 54 | 67 | | 13.5 |
| Beaverhead | − 24,600 | | + 116,500 | 54 | 67 | | 13.5 |
| Bitterroot | + 3,680 | | − 39,250 | 54 | 67 | | 13.5 |
| Blackfeet | 2,000 | | + 10,000 | 48 | 60 | | 12 |
| Cabinet | + 2,700 | | + 22,250 | 54 | 67 | | 13.5 |
| Clearwater | − 2,800 | | − 86,200 | 8 | 60 | | 12 |
| Coeur d'Alene | 500 | | 25,000 | 54 | 67 | | 13.5 |
| Custer | 18,000 | | 12,000 | 54 | 67 | | 13.5 |
| Dakota | 400 | | | 54 | 67 | | |
| Deerlodge | + 15,700 | | − 62,000 | 54 | 67 | | 13.5 |
| Flathead | − 3,900 | | 5,000 | 4 | 60 | | 12 |
| Gallatin | − 8,300 | | − 61,600 | 54 | 67 | | 13.5 |
| Helena | − 18,000 | | + 107,000 | 54 | 67 | | 13.5 |
| Jefferson | − 15,100 | | − 125,350 | 54 | 67 | | 13.5 |
| Kaniksu | 1,000 | | 11,500 | 48 | 60 | | 12 |
| Kootenai | + 1,800 | | + 60,000 | 48 | 60 | | 12 |
| Lewis and Clark | + 7,900 | | − 40,000 | 54 | 67 | | 13.5 |
| Lolo | 2,000 | | 25,000 | 54 | 67 | | 13.5 |
| Madison [1] | + 21,300 | | + 125,000 | 60 | 75 | | 15 |
| Missoula | 7,800 | | 32,500 | 54 | 67 | | 13.5 |
| Nezperce | 10,000 | | 50,000 | | | | |
| Districts 1–6 | | | | 54 | 67 | | 13.5 |
| District 7 | | | | 48 | 60 | | 12 |
| Pend Oreille | 1,000 | | + 50,000 | 48 | 60 | | 12 |
| Selway | 5,500 | | 3,900 | 48 | 60 | | 12 |
| Sioux | − 8,100 | | − 3,300 | 54 | 67 | | 13.5 |
| St. Joe | + 1,000 | | + 78,000 | 48 | 60 | | 12 |
| | − 193,510 | | −1,304,500 | | | | |
| District 2: | | | | | | | |
| Arapaho | + 12,400 | | + 30,000 | 54 | 67 | | 13.5 |
| Battlement [1] | + 43,200 | | | 54 | 67 | | |
| Bighorn [2] | + 36,000 | | − 117,500 | 60 | 75 | | 15 |
| Black Hills | 12,000 | | | 54 | 67 | | |
| Bonneville [1] | − 10,300 | | − 9,500 | 54 | 67 | | 13.5 |
| Bridger [1] | + 15,900 | | + 27,500 | 54 | 67 | | 13.5 |
| Cochetopa [1] | + 17,200 | | + 63,500 | 54 | 67 | | 13.5 |
| Colorado | + 9,100 | | 1,500 | 54 | 67 | | 13.5 |
| Durango [2] | − 12,200 | | − 68,700 | 54 | 67 | | 13.5 |
| Gunnison | + 30,600 | | | 54 | 67 | | |
| Harney | 12,000 | | | 54 | 67 | | |
| Hayden | 7,000 | | 120,000 | 54 | 67 | | 13.5 |
| Holy Cross [2] | + 9,900 | | + 32,000 | 54 | 67 | | 13.5 |
| Kansas | + 13,100 | | 500 | 72 | 90 | | 18 |
| Leadville | + 12,200 | | + 79,000 | 54 | 67 | | 13.5 |
| Medicine Bow | + 9,500 | | − 62,000 | 54 | 67 | | 13.5 |
| Michigan | 700 | | 700 | 54 | 67 | | 13.5 |
| Minnesota | + 2,000 | | | 54 | 67 | | |
| Montezuma | + 29,600 | | + 39,700 | 54 | 67 | | 13.5 |
| Nebraska [1] | 13,000 | | | 72 | 90 | | |
| Pike | − 16,800 | | + 20,800 | 54 | 67 | | 13.5 |
| Rio Grande | + 22,900 | | + 257,000 | 54 | 67 | | 13.5 |
| Routt | 36,600 | | + 91,000 | 54 | 67 | | 13.5 |
| San Isabel | 13,700 | | + 15,500 | 54 | 67 | | 13.5 |
| San Juan [2] | − 12,000 | | − 95,500 | 54 | 67 | | 13.5 |
| Shoshone [1] | + 12,250 | | − 67,000 | 54 | 67 | | 13.5 |
| Sopris | + 15,400 | | + 61,000 | 54 | 67 | | 13.5 |
| Sundance | 6,000 | 2,500 | | 54 | 67 | 32 | |
| Uncompahgre | + 29,600 | | + 57,600 | 54 | 67 | | 13.5 |
| Washakie [1] | + 2,400 | | 65,000 | 54 | 67 | | 13.5 |
| White River | + 47,000 | | + 15,000 | 54 | 67 | | 13.5 |
| | + 522,550 | 2,500 | +1,397,500 | | | | |
| District 3: | | | | | | | |
| Alamo | 14,000 | + 75 | 13,000 | 48 | 60 | 29 | 12 |
| Apache | 31,500 | 100 | 61,500 | 48 | 60 | 29 | 12 |
| Carson | + 7,700 | | − 163,300 | 48 | 60 | | 12 |
| Chiricahua | 12,000 | 300 | 2,000 | 48 | 60 | 29 | 12 |

+ or − indicates increase or decrease over 1914.

[1] Term applications authorized.
[2] Term applications previously approved effective till expiration of period.

TABLE 202.—*Grazing allowances for national forests, 1915*—Continued.

| Forest. | Number of stock authorized. | | | Yearlong rates (cents). | | | |
|---|---|---|---|---|---|---|---|
| | Cattle and horses. | Swine. | Sheep and goats. | Cattle. | Horses. | Swine. | Sheep and goats. |
| **District 3—Continued.** | | | | | | | |
| Coconino[1] | − 40,900 | − 240 | − 94,000 | 48 | 60 | 29 | 12 |
| Coronado | + 23,200 | | + 17,000 | 48 | 60 | | 12 |
| Crook | + 18,000 | | − 2,500 | 48 | 60 | | 12 |
| Datil | + 38,800 | + 220 | 138,000 | 48 | 60 | 29 | 12 |
| Gila | + 33,800 | 350 | − 47,100 | 48 | 60 | 29 | 12 |
| Jemez | 8,200 | + 300 | 65,500 | 48 | 60 | 29 | 12 |
| Lincoln | + 9,400 | + 500 | − 13,000 | 48 | 60 | 29 | 12 |
| Manzano[2] | + 9,300 | | + 95,000 | 48 | 60 | | 12 |
| Pecos | 8,900 | + 325 | 35,400 | 48 | 60 | 29 | 12 |
| Prescott | + 51,500 | 50 | − 10,300 | 48 | 60 | 29 | 12 |
| Sitgreaves | + 10,800 | | 77,000 | 48 | 60 | | 12 |
| Tonto | + 75,000 | + 600 | − 100 | 48 | 60 | 29 | 12 |
| Tusayan[1] | − 25,900 | − 50 | − 71,100 | 48 | 60 | 29 | 12 |
| | + 418,900 | +3,110 | − 905,800 | | | | |
| **District 4:** | | | | | | | |
| Ashley | + 10,000 | | + 97,000 | 60 | 75 | | 15 |
| Boise[1] | 4,000 | + 100 | 140,000 | 54 | 67 | 32 | 13.5 |
| Cache | + 17,450 | | + 127,300 | 54 | 67 | | 13.5 |
| Caribou | + 12,000 | | − 297,000 | 54 | 67 | | 13.5 |
| Challis[1] | + 6,400 | | + 81,500 | 54 | 67 | | 13.5 |
| Dixie | − 15,300 | 400 | − 5,760 | 48 | 60 | 29 | 12 |
| Fillmore | + 19,200 | + 200 | + 47,900 | 60 | 75 | 36 | 15 |
| Fishlake | + 18,500 | | − 72,600 | 60 | 75 | | 15 |
| Humboldt | + 25,700 | | − 305,500 | 54 | 67 | | 13.5 |
| Idaho[1] | + 2,500 | | − 105,000 | 54 | 67 | | 13.5 |
| Kaibab[3] | − 10,450 | | 5,000 | 48 | 60 | | 12 |
| La Sal | + 27,600 | | + 33,800 | 54 | 67 | | 13.5 |
| Lemhi | 8,000 | | 77,500 | 54 | 67 | | 13.5 |
| Manti[1] | + 27,200 | | + 150,400 | 60 | 75 | | 15 |
| Minidoka | + 18,500 | | + 75,000 | 54 | 67 | | 13.5 |
| Nevada[1] | + 6,300 | | 70,000 | 54 | 67 | | 13.5 |
| Palisade | + 6,400 | | − 97,000 | 54 | 67 | | 13.5 |
| Payette | + 6,650 | | − 96,000 | 54 | 67 | | 13.5 |
| Pocatello | 11,400 | | 30,800 | 54 | 67 | | 13.5 |
| Powell | + 13,400 | | − 72,000 | 54 | 67 | | 13.5 |
| Ruby | 16,200 | | + 34,900 | 54 | 67 | | 13.5 |
| Salmon | 14,700 | | 100,000 | 54 | 67 | | 13.5 |
| Santa Rosa | − 14,500 | | − 58,500 | 54 | 67 | | 13.5 |
| Sawtooth[1] | 6,200 | | − 313,000 | 54 | 67 | | 13.5 |
| Sevier | + 10,800 | + 100 | − 124,000 | 54 | 67 | 32 | 13.5 |
| Targhee[1] | 8,000 | | 122,500 | 54 | 67 | | 13.5 |
| Teton | − 11,000 | | | 54 | 67 | | |
| Toiyabe | 17,500 | | − 27,500 | 54 | 67 | | 13.5 |
| Uinta[1] | − 30,200 | | − 188,200 | 60 | 75 | | 15 |
| Wasatch[4] | + 14,800 | | + 85,700 | 60 | 75 | | 15 |
| Weiser | + 10,300 | 500 | − 78,000 | 54 | 67 | 32 | 13.5 |
| Wyoming[1] | 10,000 | | + 216,500 | 54 | 67 | | 13.5 |
| | + 431,150 | +1,300 | −3,335,860 | | | | |
| **District 5:** | | | | | | | |
| Angeles[2] [5] | 4,100 | | + 4,000 | 60 | 75 | | 15 |
| California | + 6,200 | 1,000 | − 59,000 | 60 | 75 | 36 | 15 |
| Cleveland | 4,000 | | + 3,500 | 60 | 75 | | 15 |
| Eldorado[3] | + 10,000 | + 50 | + 17,200 | 72 | 90 | 43 | 18 |
| Inyo[3] | − 5,550 | | − 30,000 | 60 | 75 | | 15 |
| Klamath[3] | + 8,000 | 600 | 2,000 | 56 | 70 | 34 | 14 |
| Lassen | + 12,500 | 200 | − 38,000 | 64 | 80 | 38 | 16 |
| Modoc | + 41,300 | | + 61,300 | 60 | 75 | | 15 |
| Mono | + 4,630 | | + 67,700 | 72 | 90 | | 18 |
| Monterey | + 2,250 | | − 2,500 | 64 | 80 | | 16 |
| Plumas[3] | + 14,400 | | + 75,700 | 68 | 85 | | 17 |
| Santa Barbara[3] | − 8,000 | 300 | − 3,000 | 64 | 80 | 38 | 16 |
| Sequoia[3] [6] | + 30,150 | +3,300 | − 10,960 | 72 | 90 | 43 | 18 |
| Shasta | + 9,600 | + 500 | − 24,000 | 60 | 75 | 36 | 15 |
| Sierra[3] | − 15,000 | − 500 | 21,000 | 72 | 90 | 43 | 18 |

+ or − indicates increase or decrease over 1914.

[1] Term applications authorized.

[2] 5,800 cattle and horses, 50,000 sheep and goats added from Zuni Forest.

[3] Term applications previously approved effective till expiration of period.

[4] Approximately 4,100 cattle and horses, 70,000 sheep and goats added from Uinta Forest.

[5] 4,000 goats authorized on Angeles Forest for cleaning fire lanes.

[6] Approximately 18,000 cattle and horses, 1,300 swine added from Kern Forest.

TABLE 202.—*Grazing allowances for national forests, 1915*—Continued.

| Forest. | Number of stock authorized. | | | Yearlong rates (cents). | | | |
|---|---|---|---|---|---|---|---|
| | Cattle and horses. | Swine. | Sheep and goats. | Cattle. | Horses. | Swine. | Sheep and goats. |
| District 5—Continued. | | | | | | | |
| Stanislaus[1] | 17,000 | − 200 | + 9,100 | 72 | 90 | 43 | 18 |
| Tahoe | + 7,800 | + 100 | − 59,500 | 72 | 90 | 43 | 18 |
| Trinity | + 11,800 | − 250 | + 19,600 | 56 | 70 | 34 | 14 |
| | + 212,280 | −7,000 | + 508,050 | .......... | .......... | .......... | .......... |
| District 6: | | | | | | | |
| Cascade[1] | 900 | .......... | 33,000 | 64 | 80 | 38 | 16 |
| Chelan | 500 | .......... | 25,200 | 60 | 75 | .......... | 15 |
| Columbia | + 750 | .......... | + 25,000 | 64 | 80 | .......... | 16 |
| Colville | + 6,000 | .......... | 60,000 | 60 | 75 | .......... | 15 |
| Crater | 7,800 | 500 | + 8,700 | 64 | 80 | 38 | 16 |
| Deschutes | + 4,200 | .......... | 50,000 | 60 | 75 | .......... | 15 |
| Fremont | − 13,500 | .......... | + 106,000 | 60 | 75 | .......... | 15 |
| Malheur | 24,000 | + 50 | − 128,200 | 60 | 75 | 36 | 15 |
| Minam | + 10,900 | .......... | + 62,700 | 60 | 75 | .......... | 15 |
| Ochoco | + 11,900 | .......... | − 94,000 | 60 | 75 | .......... | 15 |
| Okanogan | + 7,000 | .......... | 75,000 | 60 | 75 | .......... | 15 |
| Olympic | + 2,500 | .......... | .......... | 60 | 75 | .......... | .......... |
| Oregon | + 2,600 | .......... | + 32,000 | 64 | 80 | .......... | 16 |
| Rainier | − 6,000 | .......... | + 49,000 | 64 | 80 | .......... | 16 |
| Santiam[2] | 300 | .......... | − 22,200 | 64 | 80 | .......... | 16 |
| Siskiyou | − 3,900 | + 750 | + 4,000 | 56 | 70 | 34 | 14 |
| Siuslaw | 1,200 | .......... | 4,000 | 56 | 70 | .......... | 14 |
| Snoqualmie | .......... | .......... | + 6,000 | .......... | .......... | .......... | 16 |
| Tongass | + 2,000 | .......... | .......... | 60 | 75 | .......... | .......... |
| Umatilla | − 10,300 | .......... | − 62,500 | 60 | 75 | .......... | 15 |
| Umpqua | + 1,200 | .......... | 12,000 | 64 | 80 | .......... | 16 |
| Wallowa | + 21,200 | 100 | 120,000 | 60 | 75 | 36 | 15 |
| Washington | .......... | .......... | + 15,000 | .......... | .......... | .......... | 16 |
| Wenaha | + 11,200 | .......... | 103,100 | 60 | 75 | .......... | 15 |
| Wenatchee | − 550 | .......... | − 69,900 | 64 | 80 | .......... | 16 |
| Whitman | + 8,850 | .......... | − 113,000 | 60 | 75 | .......... | 15 |
| | + 159,250 | +1,400 | −1,290,500 | .......... | .......... | .......... | .......... |
| District 7: | | | | | | | |
| Arkansas | 15,000 | 22,000 | 2,000 | 48 | 60 | 29 | 12 |
| Florida | 6,000 | 3,000 | 7,000 | 48 | 60 | 29 | 12 |
| Ozark | 13,500 | 20,000 | 2,200 | 48 | 60 | 29 | 12 |
| Wichita[3] | − 4,630 | .......... | .......... | 72 | 90 | .......... | .......... |
| | + 39,130 | 45,000 | 11,200 | .......... | .......... | .......... | .......... |
| Purchase areas: | | | | | | | |
| Cherokee | 1,500 | 400 | 200 | 1.50 | 2.00 | 90 | 45 |
| Georgia | 860 | 430 | 1,290 | 85 | 1.10 | 50 | 25 |
| Massanutten | + 200 | .......... | + 100 | 1.50 | .......... | .......... | 45 |
| Mount Mitchell | − 600 | + 100 | − 50 | 1.50 | 2.00 | 90 | 45 |
| Nantahala | − 400 | −2,100 | − 150 | 1.50 | 2.00 | 90 | 45 |
| Natural Bridge | − 100 | .......... | .......... | 1.50 | 2.00 | .......... | .......... |
| Potomac | 645 | .......... | 1,300 | 1.50 | .......... | .......... | 45 |
| Savannah (N) | + 200 | + 250 | + 200 | 1.50 | 2.00 | 90 | 45 |
| Savannah (S) | + 50 | + 50 | + 25 | 1.50 | 2.00 | 90 | 45 |
| Shenandoah | + 2,000 | .......... | + 150 | 1.50 | 2.00 | .......... | 45 |
| White Top | − 450 | 400 | − 150 | 1.50 | 2.00 | 90 | 45 |
| | + 7,005 | −3,730 | − 3,615 | .......... | .......... | .......... | .......... |
| Total: | | | | | | | |
| 1914 | 1,891,119 | 65,645 | 8,867,906 | .......... | .......... | .......... | .......... |
| 1915 | 1,983,775 | 64,040 | 8,747,025 | .......... | .......... | .......... | .......... |
| Increase or decrease over 1914 | + 92,656 | −1,605 | − 120,881 | .......... | .......... | .......... | .......... |

+ or − indicates increase or decrease over 1914.

[1] Term applications previously approved effective till expiration of period.
[2] Term applications authorized.
[3] Transferred from District 3.

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